THE BUILDER

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McNeill, F. & Co. Ltd.
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Francis, S. W. & Co. Ltd.
Haskins, S. & Bros.
Meighan, James & Son
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THE BUILDER

A RECORD OF ARCHITECTURE AND CONSTRUCTION.

WITH WHICH IS INCORPORATED THE "BRITISH ARCHITECT."

VOL. CXVII.—No. 3998 SEPTEMBER 19, 1919.

"NEITHER SHALL HE EAT."

WE are fast approaching a climax in the industrial situation. At the conclusion of the war we all hoped for whole-hearted co-operation in the restoration of the national position and united efforts to clear away the physical and moral wreckage, and to make a new start on generous and productive lines. There is nothing to be gained by any further pretence that this co-operation is in progress; on the contrary, we all know that everywhere discontent, suspicion, and inefficiency are rampant. Government officials cling to office, and departments run businesses on lines that would bring a private firm to ruin. There are industrial combines devoting themselves to suppressing free markets, and making illicit profits, labour demanding ever shorter hours and more wages, and combinations of workers threatening to hold up the country.

It is, perhaps, a little beyond our province to deal with the industrial situation as a whole, but the great industry in which we are interested is so intimately bound up with the country's position that we cannot refrain from one or two general comments. In the first place, as we have often pointed out, we must view things from an international standpoint. During the war the country's industries were largely run or controlled by the State, some were curtailed or suppressed, others fostered or subsidised, and the first thing we have to realise is that all these emergency and artificial conditions are thoroughly bad for a going concern in normal times. State control means officialism, which is expensive and inferior to private business, in addition to being slower and more hampered. Subsidies mean heavy national expense and trade dislocation. True, these cannot immediately be safely swept away in all cases, but our aim at their reduction and eventual disappearance must be ever in the foreground, however many officials will disappear in its attainment. The market price of a commodity is not the price we like to put upon it; it is, and will become more and more, the price at which the civilised world as a whole can deliver it to this country, and this price depends upon speed and efficiency in production and cost of transit. What the worker has yet got to see is that he cannot get more out of any business than such a proportion as will leave enough to enable the concern to make its continuance worth the while of the promoters. He may reply that the promoters are inefficient, and by better business methods might make the business produce a bigger income, but assuming this to be true in many instances, he must necessarily produce confidence in his employers before he can expect this improvement. The worker may say, "If you re-organise your office, appoint more active salesmen and agents and introduce new machinery you could pay us higher wages and still make a fair income"; but a fair reply would be that "until you reach some finality in your demands and give me some assurance that you will really increase production, and I feel that I can rely upon your agreements, I dare not jeopardise my life's work and savings by launching out into heavy expenses which I alone have to bear in carrying out what may possibly be very desirable." There are, of course, excuses to be made for slackness in production. The matter was recently put before us very bluntly by an employer by no means antagonistic to labour, and one who has done well by his men. "There is too much money about," he said, "and, further, the more a man earns nowadays the less work he feels inclined to do." Our inflated currency has, no doubt, something to do with our difficulties, and here again we seem quite unable as a nation to see that half the wealth of the country in cash is entirely unreal. To try to bring this home, let us suppose that a certain town decided to disregard the old currency standards and to start a mint of its own, and that this mint issued its own notes in great profusion at the cost of their production. The value of money would fall, and, being plentiful, the cost of commodities would rise, but this would not trouble people, as wages would increase.

Generally, there would be a very good time in the town, but presently, when commodities ran out, it would be found that people in other towns were not inclined to accept the issues of the local mint, or if they did, only at a serious discount which would bring home—perhaps sadly and too late—the fact that money is merely a standard of value and has no intrinsic worth. The town could only be saved from ruin by producing actual goods in large quantities, which (through the medium of money) it could use to clear its debts and for purposes of exchange. Now, this is just our position as a nation in the markets of the world. We have to get back into the open markets after our good time (for the war was a good time to a vast number), and we always find ourselves back at the end of our discussions at the word "production." "If a man does not work neither shall he eat," is as true to-day as when this sentence was written. The worker may refer us to the days of sweated industries, and talk of employers living in luxury and idleness. We are not defending these things; on the contrary, we are glad that labour has come into its own; but power entails responsibility, and we would remind the workmen who is "out for a fight," that there is a story about the ill-timed death of a goose which laid golden eggs. No one can say now that labour is underpaid; why cannot we agree to stabilise the position at present rates and fair value for money, say, for twelve months? Nothing is wanted more than a firm contract. This alone can ensure that development on the part of the employer for which labour is asking. The only alternative is to put up prices, and any child can see that this can only again increase the cost of commodities and eventually result in a further demand for increased wages. Thus, the cycle will continue, while every upward change means more trade for the foreigner and the stifling of home industry. Labour is now powerful and well organised; before long, we are told, we shall have a labour Ministry, and we agree that this seems very probable. In this event, how are the workmen going to "run" the country? They have on more than one occasion declined an invitation to run on their own behalf a private business, but if returned at the polls they cannot decline to run the much more vital business of the State. They are indeed, the greater part of the State, and if they are to enjoy the good things no one wishes to deny them, they must run the State successfully against the competition of our neighbours, just as their employer Mr. Smith runs his business in friendly rivalry against Mr. Brown next door, and if Mr. Brown relies on payment by results, a free field and every financial incentive for a man to do his best and come to the top, Mr. Smith is not going to succeed by a system of doles, premiums on slacking, curtailed production and a flat rate for the energetic skilled worker and the incompetent idler. The labourer is worthy of his hire, but he must work and earn his money or there will be none to earn.

NOTES.

Contract and Value. WE suspect that the contract system of building, which evidently dates back a long period, is not so completely responsible for the lack of substance and quality as is suggested in the interesting article from the *Times* which we quote to-day. Anyone who is conversant with the best modern country houses must be aware that work has been done therein which compares quite favourably with the old. It is true enough, as some correspondents suggest, that if the best work is desired it can be had under the contract system. If an architect's services are of any value, it is he who can insist to his client on the importance of measure and value.

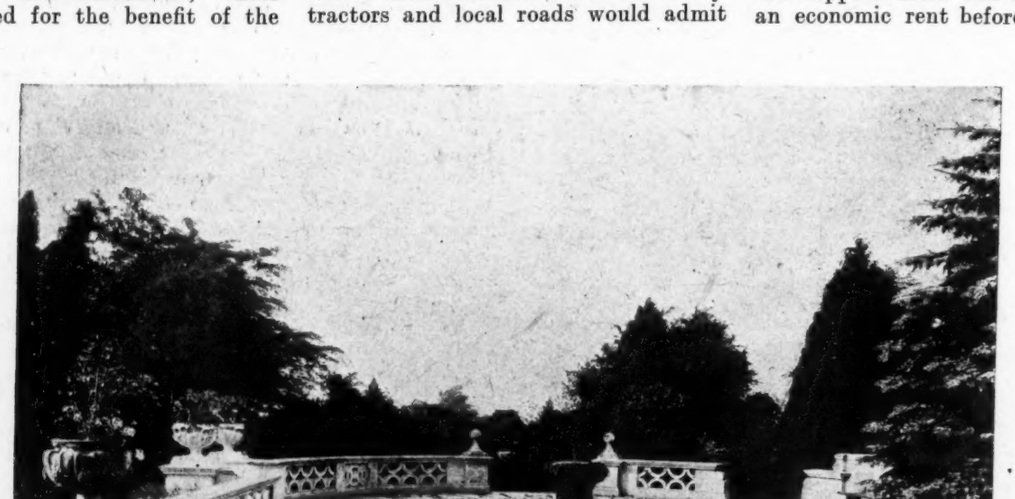
The Value of Incentive. IT will be noted that the call of the Government is for "more enterprise, more vigour and more initiative"—and none can doubt that the call is a right one. The philosophic observer of men will, however, have some grave doubts whether our legislation will lead towards this. The one outstanding appeal to mankind is self-interest, and we are bound to admit this, even in face of the magnificent response which the feelings of patriotism have called forth. We are groaning now under the tyranny of profiteering, which shows how utterly heedless of national interests self-interest can be. We are driven to suspect the benefits of any legislation which does not take full account of the selfish interests of the individual; these must be used for the benefit of the State—they cannot be ignored. What will be the result of Governmental control of the prices of building materials? Will those who want to build benefit by it? or, if so, will they benefit at the expense of others? These are awkward questions, to which it is difficult to give a convincing reply.

Craftsmanship of the Builder. A NEW departure in illustrating the work and practice of builders and contractors, is the well-produced *brochure* entitled "The Craftsmanship of the Builder," which contains illustrations by Mr. Frank L. Emanuel of buildings erected by Messrs. Higgs & Hill, Ltd. Anyone who is familiar with the striking buildings shown therein, will have no difficulty in appreciating the excellence of the craftsmanship attained by this well-known building firm; some of the finest quality of modern interior woodwork is to be found in Baring's Bank (the late Gerald Horsley, architect), and "Bassetts," Orpington (Mr. Maurice Webb, architect). We illustrate on this page an admirable garden done by the firm for Mr. Webb.

Gretna. WHAT is to become of Gretna—the War Gretna—which at one time employed 20,000 hands in the making, and had a population of 13,000? It is, of course, usually an expensive and disappointing business to try to move a town, but we imagine that something economical might be done in a large way. Few of the buildings can be called portable, but it would seem worth while to consider how far heavy tractors and local roads would admit of the piecemeal removal of the buildings, without entire dissection, to the areas now approved for housing schemes in not too distant places. We do not want more "deserted villages," and think that engineering and architectural skill might devise some scheme superior to calling in the housebreaker.

More Fountains in London. THE plea for more fountains in London is a timely one, and it would certainly be possible to arrange and design some in a better way than that by Gilbert at Piccadilly Circus. Trafalgar-square certainly looks pleasanter when the fountains are playing, and we should like to see some in front of Buckingham Palace, one in Parliament-square at Westminster, and a few in our parks, &c. In the course of a pleasant article, the *Times* says: "London needs a great supply of fountains for her own cheer, to enhance the charm of her streets, for cleansing, refreshment and instruction, and as memorials; but with the reservation that the sculptor's hand must be liberally upheld."

Building Wages and Housing. WE wonder if it would enlighten public opinion as to our economic fallacies if some popular periodical were to clearly explain the results of the accepted housing policy as they are disclosed. The other day an extra rate of pay of 3d. per hour awarded to builders' workmen, involved an addition of over five thousand pounds to the 82 new houses to be built for the Guildford Corporation. We suppose there was no prospect of an economic rent before this rise, so



The Terrace, "Foxbury," Chislehurst." MR. MAURICE E. WEBB, F.R.I.B.A., Architect.

Photo: Edis, Durham.

Durham Cathedral : Nave, looking East. (See p. 288).

there is another five thousand pounds to be charged against those who will not use the houses.

The Preservation of Ancient Buildings.

THE reports of the S.P.A.B. are always interesting, and the later ones have contained some exceptionally good illustrations of delightful old work. The forty-second report now before us, besides such well-known subjects as the half-timber work at Lavenham, contains some appealing ones from Sudbury and a delightful plate of Faringdon Town Hall, which shows such a quiet and harmonious line of old houses as we are never likely to see again, because the modern feeling is dead against such simple and unobtrusive expression. We are glad to note some remarks in the introduction on war memorials, and the inadvisability of a purely utilitarian building being adopted for that purpose. The preface to the report raises again the debatable question as to additions to an ancient building. We are told that, as we have no style of our own, we cannot justify additions or alterations which destroy old work, and that we must not reproduce the style of a past period in the way we think it might have been done, because we "have no guide, but each his own individual whim to point out to them what is admirable and what contemptible." In view of what our ablest "Gothic" architects have done in recent years, this is surely a debatable point. We are glad to see in the report the admirable pleas for the preservation of our villages and cottages, by Prof. Adshead and Mr. Edward Warren.

The Trade Unions Congress

MAY we congratulate the President of the Trade Unions Congress, Mr. G. H. Stuart-Bunning, on the very statesmanlike speech he made at the opening of the Congress at Glasgow, on Monday last week? The whole address was expressed in moderate and well-reasoned terms, and in no part of it was the President more happy than in the passages in which he dwelt on the refusal of the Parliamentary Committee to convene a special Congress to consider the question of direct action. "Consider the exact position of affairs," the President is reported as having said. "The Congress has never yet fully accepted the policy of a national strike on the industrial matters which are its primary function. I do not think it has ever seriously discussed the national strike on a political issue, still less on several political issues on some of which there were sharp divisions among our own people," and he proceeded to point out that if the Government had fought, as it would have been bound to do, there could have been nothing for it but a revolution. Then the President, in another passage, makes a point too often lost sight of now that the franchise has been lowered. "As to direct action itself, I do not believe in industrial strikes on political matters, in other words, I do not despair of constitutional methods. There is no political reform, however great and far-reaching which the working people of this country cannot achieve by the ballot box, and direct action is a confession of failure."

Increased Output.

ON the question of increased output, we are also in agreement with Mr. Stuart-Bunning when he says, "Let it be clearly understood that increased output can only be obtained by the co-operation of both employers and employed," and whilst his comments on lack of discipline in trade union ranks are well timed, and direct attention to a serious defect in trade union organisation, it must also be admitted that his observations on the promises of Ministers made in times of stress compared with the manner in which they are fulfilled have too much ground to justify them. We, like Mr. Stuart-Bunning, are believers in constitutional methods and the future which lies before all classes in this country if those methods are observed, and if all classes will wholeheartedly co-operate in their efforts to re-establish our trade and industries on a better basis than before. If the spirit of economy and of some self-denial and considerable patience can be exhibited during the anxious period which still lies ahead, not only of this nation but of the whole world, then we shall show ourselves worthy of the victory which we have gained, and shall reap the reward for all the self-denial and suffering entailed by the war.

House at Carshalton.
MR. ROBERT ATKINSON, F.R.I.B.A., Architect.

GENERAL NEWS.

Professional Announcement.

Messrs. Gardiner & Theobald, surveyors, have removed from 110, Great Portland-street to 96, Gower-street, W.C. 1.

Somerset War Memorial.

On the recommendation of Mr. John W. Simpson, President R.I.B.A., the Somerset War Memorial Committee has decided to erect the county memorial on Maesbury Castle Hill, near Wells. The cost is estimated at £20,000.

The Lincoln Statue.

The Barnard statue of Abraham Lincoln, which has been presented to the city of Manchester, was unveiled on Monday last by the Lord Mayor. The site selected is in Platt Fields Park, about two miles from the Town Hall.

Smithfield War Memorial.

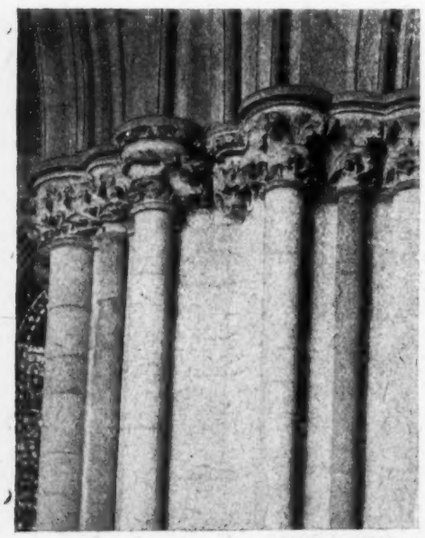
The Smithfield Market War Memorial Committee has decided to include the erection of a memorial and roll of honour in the Central Avenue of the market, as part of the memorial to those connected with the market who lost their lives in the war.

The Royal Archæological Institute.

The autumn meeting of the Institute will be held at St. Albans, on September 25 and 26, under the guidance of Mr. W. Page and Mr. C. R. Peers. The meeting will include visits to places and buildings of interest in the neighbourhood, including the Abbey Church of St. Alban (1077–1093). Applications for tickets to attend the meeting should be made to the Secretary, 19, Bloomsbury-square, W.C. 1.

Educational Grants for Ex-Service Men.

Under the Government scheme of financial assistance for the higher education of ex-service officers and men, the total number of grants awarded by the Board of Education now amounts to 9,500, including 4,000 officers and 5,500 men. The courses in respect of which grants have been awarded include more than 2,500 for engineering and technological subjects, between 800 and 900 for classics, philosophy, and literature, and about 1,200 for pure science and mathematics. Applications are being dealt with at the rate of more than 100 a day.



Wilkinson, Durham.

Capital in "The Nine Altars" (1260-70), Durham Cathedral (*see p.* 288).

Stonehenge.

In a letter to the Press, Major F. M. Montresor urged that now Stonehenge is the property of the nation, steps should be taken towards its partial restoration with a view to saving it from the effects of time and weather. He suggested that some of the trilithons should be restored to the vertical and made safe, and the props removed; where the stones had been severely undercut by the weather, he thought that concrete should be run into the holes to prevent further action by the weather. The President of the Society of Antiquaries, in reply, pointed out that in 1900 representatives of the Wiltshire Society and the Society for the Protection of Ancient Buildings were appointed, under the direction of Professor Gowland, F.R.S., to do what was immediately necessary. The great leaning stone was then set upright and fixed in a bed of concrete. Now that Stonehenge is national property, its preservation devolves upon the Office of Works, and it is proposed to begin the work of restoration again.

The late Mr. Edwin O. Sachs.

We much regret to announce the death of Mr. Edwin O. Sachs, F.R.S.Ed., F.R.G.S., Chairman of the British Fire Prevention Committee, which took place on September 9, after a prolonged illness. Mr. Sachs was born in London in 1870, and was educated at University College, London. He then spent some years on the Continent studying architecture and the fire-fighting and fire-protective services. He started practice as an architect in London in 1892, and during the early years of his practice he wrote and published a work entitled "Modern Opera Houses and Theatres." Up to the time of his death, he was Consulting Architect to the Grand Opera Syndicate, Covent Garden Theatre. He designed and superintended the erection of several large factories, and was architect to the Egyptian Government for the Khedival Opera House, Cairo; he designed Walmer Place, and other country and town residences, and specialised in large factory works, amongst those designed and erected by him being Siemens' Works, Dalston, and the Asbestos Works, Higham.

It is, however, mainly by his interest and activity in relation to fire protection and fire prevention that he will be remembered. At an early age, Mr. Sachs was impressed by the great loss of human life and property due to fire, which he felt might be reduced to a minimum by improved building legislation and the observance of the ordinary measures of precaution. The Paris Charity Bazaar Fire, in 1897, led him to form the British Fire Prevention Committee, of which he was the Chairman and guiding spirit up to the time of his death. Thanks to his energy and devotion, and his able leadership, the Committee's work, from very small beginnings soon covered a vast field of activity, until the foundations of a comprehensive organisation were firmly laid. The large number of tests undertaken by the Committee were made in a specially-constructed testing station which Mr. Sachs designed, and to which he not only gave unstinted labour, but which was largely financed by him. This testing station, which has been enlarged and improved upon from time to time, was the first of its kind, and has served as a model for similar centres of investigation throughout the world. The activities of the Committee were greatly increased during the war, and included arrangements for a voluntary Fire Survey Force for over 2,000 war hospitals, camps and factories, and research work of the highest importance was initiated and guided by Mr. Sachs' unflagging energies, which never ceased even during his latter years, which have, unfortunately, been accompanied with much suffering.

At one time Mr. Sachs was a regular contributor to the *Builder*, and we regret to record his death at such a comparatively early age.

Wilkinson, Durham.

North Transept Aisle, Durham Cathedral (*see p.* 283).

BOOKS.

Economic Farm Buildings: Their Systematic Planning, Improvement and Construction. By CHARLES P. LAWRENCE, F.S.I., with an Introductory Note by Sir Thomas Middleton. London: The Library Press, Ltd. Price 10s. 6d. net.

This excellent book will be of as much value to architects as to farmers. The author has a first-hand knowledge both of farming and of building in all parts of England, and looks at the problems involved from a thoroughly practical and British point of view. Architects should not neglect the study of farm planning. In no department of design is there a greater need for a broad principle to be established, nor the real requirements to be elicited; and probably in no department would any single architect find it more difficult to discover what his client really requires and can afford. In this book the reader can make himself acquainted in principle and detail with the general requirements of farmers in the planning of homesteads, from the smallholder to the owner of 400 acres and upwards. Chapter III, "Development of Homesteads," deserves special attention. The author's remarks are illustrated by small, comprehensive scale plans which greatly assist the reader. The author does not show himself in sympathy with the American developments in the planning and ventilation of cow-houses, and his chapter on "Lighting and Ventilation" does not go very scientifically into that important subject. But throughout his book experience and common sense rule, and all information is expressed tersely and lucidly.

We are glad to read in Sir Thomas Middleton's Introductory Note, "before deciding on a policy of limitation and delay, those responsible for equipping land for profitable occupation should be reminded that the rise in the cost of building is at least equalled by the rise in the farmer's wages bill. . . Relatively, indeed, suitable buildings are even more necessary for successful farming than before the war. High wages will not secure efficient labour if the living accommodation is unsatisfactory, and the waste of manure which everywhere results from bad buildings will be more ruinous than ever."

Aeroplane Timbers. By GILBERT R. KEEN. London: Rider & Son, Ltd. Price 6s. net.

Although, as suggested by the title, primarily intended for aeroplane builders, the information contained in this book regarding the formation and structure of timbers should be useful to all to whom a knowledge of the strength and quality of various woods is a matter of importance. The book is illustrated with a large number of enlarged photomicrographs of samples of timbers.

CORRESPONDENCE.

The Beauty of Structures and Make-Believe Styles.

SIR,—It will be courteous to reply to Mr. G. H. Blagrove, although I have little hope in any controversy on "styles," and cannot further enter into it.

(1) He suggests that the Law Courts are more make-believe than Whitehall Palace. Now, Street and his generation thought just the reverse, and such reversals of thought every fifty years are a little absurd. Again, I happen to have made a special study of the sources of Inigo Jones's "designs," and they are close imitations of Palladio's imitations of Roman imitations of decadent Greek fashions. That is make-believe—the production of what may otherwise be called "waxwork" architecture. It is urged that the Whitehall frontage "tries to look like part of a royal palace, and succeeds," but that does not touch the question of make-believe style. The compositions of spires and tracery and crockets we see in our suburbs look very like what we are accustomed to call churches, yet they are in make-believe "Gothic." "Look like" should not be the aim; buildings should *be*.

(2) In the past, "each style has been developed from a preceding one." So far as this is true, it always will be true, whatever happens. The "tanks" were developed, although the designers were not careful to follow the Italian Renaissance. Moreover, Whitehall is a poor example of developing a style, as it was imported. However, I do not care to chop logic on style imitation any more than I wish to discuss prophetic almanacks, on which so much may be said.

(3) "Art without rules is unprecedented." This, again, is ambiguous; there are obvious rules of service and honesty and economy in structures, and there are sham "rules of style," which are only the vague un-understood rumours of superstitions.

(4) "We cannot revert . . . to the hut builder, the only (?) alternative is the further development of some pre-existing style (?) . . . . The style ready to our hands (?) is that of the Italian Renaissance, &c." Still this anxiety about "styles," and the Italian Renaissance recommended for make-believing; and this all again a hundred years after Pugin went over the ground! Please, I am tired.

W. R. LETHABY.

The Cost of Building.

SIR,—I wish to offer a few observations upon the very high, and, in my opinion, unreasonably high, cost of building in connection with housing schemes at the present time. Public bodies are accepting tenders for cottages (built in large numbers at the same time) at the rate of between £900 and £1,000 each, which is at least four times the cost of such accommodation at pre-war rates. Such abnormal figures induce the long-suffering taxpayer to ask whether the payment of such enormous sums of public money is really necessary.

One reason for these high prices, no doubt, is the fact that it has been considered desirable to build these cottages in a way that will make them last for centuries, when, in my opinion, it would be more business-like to consider a life of, say, 40 or 50 years quite sufficient for such a class of building. The next fifty years will see large changes and improvements in all departments of life, and it is not unreasonable to suppose that ideas as to planning and construction of dwellings will be similarly affected. In 50 years' time these new cottages which are about to be built may be out of date, or the location of industries may be changed, so that they may be out of place. We have not reached the last word in the planning and construction of cottages, and there is a good deal to be said for the scrapping of such properties every fifty years or so. In any case, fifty years is quite long enough to look ahead. It is to be expected, too, that in a few years' time the cost of building will reach a more normal figure and, as a natural consequence, it is practically certain that in five years' time these cottages, which have cost £1,000 to build, will be worth only half that amount or even less. The urgent need for cottages is unquestionable, but their building on a less substantial and less costly system would expedite rather than delay their erection.

There is no doubt that by the adoption of one of the systems of concrete-block construction, or such a system as "Speakers" steel construction faced with asbestos cement sheeting, the accommodation recommended by the Local Government Board could be provided, even at the present time, at from £300 to £400 per cottage, instead of £1,000. Such a form of construction would be sanitary, healthy, and fireproof, and would certainly have a life of fifty years or more. I am conservative enough to deeply regret the necessity of departing from the old-fashioned English type of cottage, but the attitude of labour at the present time, when the object aimed at seems to be to produce as little as possible at the highest possible cost, makes even the most conservative lover of old architectural traditions look for some less laborious unit than the brick for building purposes. One way to bring down the cost of building at the present day is to restrict the amount of labour and "hand work" on the site as much as possible, and to build with ready manufactured articles requiring little labour or scaffolding in erection. Besides which, there is no inherent reason why the systems of building advocated above should not be made architecturally pleasing as well as cheap and sufficiently substantial. From a commercial point of view, and taking into consideration the present serious financial position of the country the object, surely, should be to spend as little rather than as much as possible, at a time when one gets so little for one's money in the matter of building.

I feel confident that before many years have passed the country will look upon the building of these cottages at such an unreasonable price as a very extravagant and wasteful expenditure of public money.

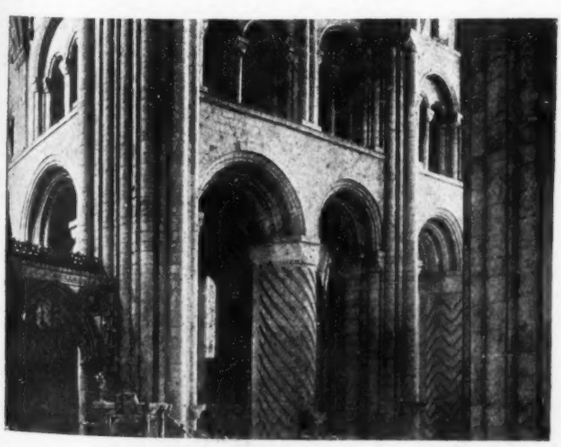
H. M. HODGSON, F.S.I.

Homes for the People: Bricks v. Concrete.

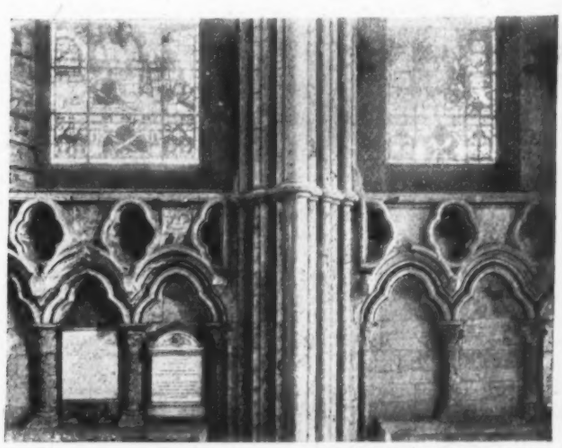
SIR,—I thank you very much for publishing my last letter in reference to article by "Anglo-Australian Resident Engineer." Now, I should like to pass a few remarks in reference to his article in your issue of August 29.

I do not advocate for less output, nor do I suggest binding a man to 500 bricks per day. I quoted in my last letter 500 bricks per nine-hour day on average, as I quite well know it is possible to bury 1,000 bricks per nine-hour day—probably a few more in some cases. He has quoted the lowest possible prices per ton, but I take it he is dealing with only one class of work, such as I call cottage weaving, or speculative building, where almost anything will do, as most of it is covered, and what little there is left exposed, well, it suits the purpose. There is other work, several feet thick, where the bricklayer builds up the face of the work and buries bricks behind by the 1,000. I am dealing with brickwork in all its shapes and forms, where it is done as it should be done, and where it is worth looking at, and a credit to a bricklayer and the trade. And, again, if you want a substantial building it depends on the brickwork, and if you want the best out of brickwork it is essential that it should be done properly—not built to-day and falling to pieces in a few years' time. When it is done properly, it will stand for hundreds of years and always look good, like the real old English homes. I shall still stick to the average of 500 per nine-hour day, but I do not suggest that a bricklayer shall not lay more than 500 per nine-hour day if he can. That lays with the class of work he is doing. In dealing with the clerk of works, he makes unfounded charges against him, and also against the bricklayers. It is easier for the bricklayer to flush his work up properly and use mortar, and better for the laying of the next course, not as he says: "Here he comes," and then the bricklayers just skim a little mortar on the top. The clerk of works is generally a practical man, and does not walk about with his eyes shut; they also have a habit of carrying a steel rule with them, and they often poke it into the joints to see if they are full up and to see if the work is sectional. I do not know much about Australia. I have heard they do great things over there; but we do greater things in Great Britain.

A. SANDERS.



South Transept, Durham Cathedral.



Photos: Wilkinson, Durham.

The Nine Altars, Durham Cathedral. (See p. 288.)

DURHAM CATHEDRAL.

By E. H. SEDDING, F.R.I.B.A.

THE splendid military position of the Cathedral and Castle of Durham is due, not to Carilef, Flambard, or Pudsey—the three great Norman builders whose work we now behold—but to the military genius of our valiant Saxon forefathers. The horse-shoe site, formed by the River Wear, measures scarcely 300 yards at its narrowest point, and this high position was defended by a strong barbican. From this fortlet to the south-west of the loop of the river, the plateau in which the city with its great fortress-church and castle stood measures little more than half-a-mile in length, while the greatest breadth between the waters is barely half its length. To storm the city in the days when catapults, Balearic slings, or the lance propelled by the swelling whirlwind of the balista, formed the principal engines for attack, was an almost insuperable undertaking. The castle of the veteran Hotspur, at Warkworth,* in Northumberland, is another example of such natural strength; but the winding Coquet has not the depth or width of the River Wear, neither does the "donjon keep" of the Northumbrian earl stand on so great an elevation as the mighty edifices on Durham's mount.

It is probable that the fine conception of the Cathedral design was partly due to the banishment by Rufus of Carilef, the second Norman Bishop of Durham, who, during his three years' exile in Normandy, made full use of his opportunity to study the latest achievements in building. In 1093 he returned to his see, and in less than three years the choir and aisles, the four tower arches, and as much of the nave and transepts as was requisite to withstand their thrust had been built. To this industrious prelate, therefore, we owe, not only the eastern limb, but also the scheme of the entire ground-plan, which he dedicated to St. Cuthbert. It is readily admitted that the first bay of the nave formed part of his work; and it is only natural to assume that portions of the west walls of the transepts, as well as of the east, were built for the same reason, although not generally allowed by historians.

The name of the architect is unknown, and so Bishop Carilef must be credited as the first "ingeniator" of the Norman church of Durham. It is more than probable that the monks continued the work during the three years' interregnum that preceded his successor, who, as Bishop Palatine from 1099 to 1128, finished the transepts and carried up the walls of the nave, with its western towers, to the roof.

History informs us that the nave ceiling was carried out by the monks (1128–33), but architects, at least, will give the credit of its design to Edward, architect of Flambard, who constructed a similar high vault over the south transept. Flambard's architect seems to have faithfully continued the design of Carilef (or his architect) with but slight modifications; as, for example, by lessening the bulk of the major piers, as seen in the choir, and also by avoiding the irregularity of the arches so noticeable in the triforium of the previous work, and by adding two smaller side arches to his clerestory windows. His work may be distinguished from the severe and earlier masonry by the profuse ornamentation, chiefly of the zig-zag type so freely lavished upon his arches, and even upon the ribs of the vaults. Carilef's high vault of the choir was superseded by the existing thirteenth century one, erected a few years after the addition of what is known as the "Nine Altars" was made, when Thomas de Melsanby was Prior, in 1242—whose architect was Richard de Farnham. The grandly proportioned and executed termination of the eastern limb (the prototype of which may be seen at Fountains), may have been prompted by the insecurity of Carilef's apsidal end.

Although Flambard's architect carefully adhered to the design of Carilef's plan of quadripartite vault, he was not content with the plainer ribs of the choir aisles, for, in his continuation westward from Carilef's two bays of the nave aisles, he decorated their sides with zig-zags, adopting the same method of enrichment for the ribs of the higher vaults of the nave and south transept. From the unornamented ribs of the north transept, we are inclined to believe that this groined vault formed part of the general design of Carilef, executed after his death by the monks, who may also have completed the walls of the nave aisles, ready for the completion of their vaulting. The earliest vaults, therefore, are over the aisles of the choir, aisles of the north and south transepts, and the first two bays of the aisles of the nave; and we think also that the higher vault of the north transept should be included.

The key-stones of the cells of the earlier and lower vaults at Durham, Lindisfarne, Winchester and Dunfermline, were kept at the same height even when the spaces to be groined were irregular and larger in area, as, for example, in Flambard's vault of the western towers, where the craftsmen kept the spring at a lower level in order to keep the crown level with those of the adjoining vaults. Mr. Bilson informs us that the key-stones of Carilef's vault of the choir aisles are not shouldered to take the ribs, which are twenty-two inches wide, or seven inches wider than at Winchester—their construction being somewhat clumsy. The compartments of the cells slope upwards to the apex, in one instance as much as twenty-seven inches from the crown of the transverse arches to the key, twenty-one inches from the aisle wall, and about eight inches from the arcade arch to the same point. The transverse arches of the aisles are semi-circles, unless curtailed in span by the thicker piers. The curve of the diagonals is an irregular ellipse throughout the earlier vaults; whereas in the nave and south transept, it is rather more than a semi-circle. The five-feet thick arches over the alternate or major piers of the nave are pointed.

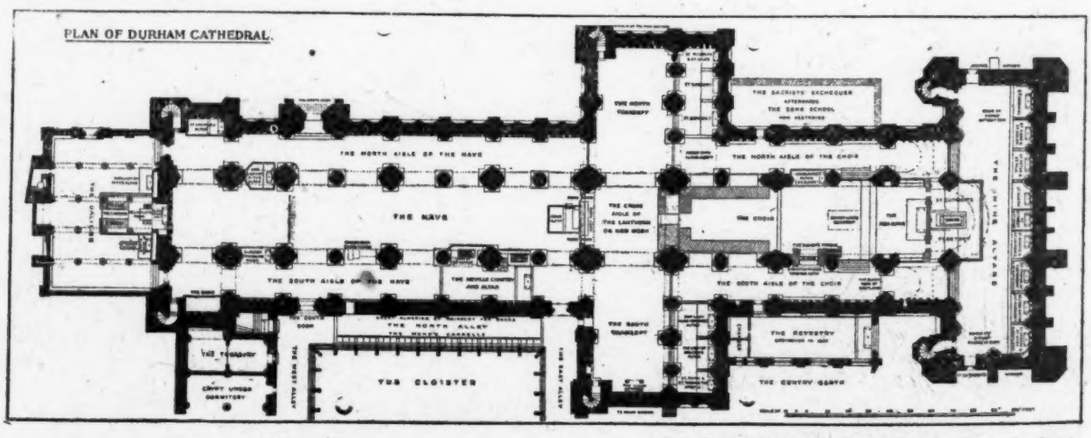
The Norman vaults at Durham are in rectangular compartments; in the aisles, they comprise one bay, but in the transepts and nave the double or twin quadripartite embraces two bays within the cross arches over the larger piers. We attribute the successful effect of the scheme partly to the absence of transverse ribs over the intermediate or circular piers where the diagonals, no less than twenty-five inches in width, arise from corbels; neither are there wall or ridge ribs to interrupt the broad spacing of the domed surfaces of the Norman ceilings, which spread naturally over the massive walls and giant piers beneath. In the compartments of the transept next the central tower the arrangement is the same; but in the narrower bays at the ends of the transepts, instead of a double quadripartite as in the aisles below, each double bay is spanned by a single vault. This departure from the original scheme was, to a considerable degree, caused by the intrusion of the square newel stairways into the vaulting areas. The early period when this ingeniously designed vault was finished may have suggested new ideas to subsequent craftsmen.

The inability—if we may use the term—of later builders to vault a Norman church with success cannot be found in the case of Durham choir. The later craftsmen in this case conformed their genius to the spirit of the older work, founded upon the bases of the circular arch, which developed into an infinitude of pointed forms in its eastern transept and in its three towers, like the massive trunk of some great tree sending forth its later vegetation. With the depressed groined vaults seen in the naves of Gloucester and Tewkesbury, the result is very different. The colossal range of six-and-a-half feet cylinders in the nave of the latter earlier abbey church, only two diameters apart, are nearly thirty-one feet to the springing level of the arches, or twenty inches higher than those at Durham, where the spacing in some of the bays is nearly half as wide again. The Egyptian subjects carved in the triforium at Tewkesbury add weight to the impression that the Norman knight, Fitz-Hamon, whose bones rest in that great abbey, was inspired rather by the pantheistic temples of Egypt than the Christian sanctuaries of Normandy.

The heavier cylinders of the Durham nave, nearly a foot wider than those of the choir or transept, were planned by Carilef, when he started the western limb by erecting one bay. The great prelate Flambard, courtier and friend of Rufus, we may easily imagine ordered the lavish ornamentation of the chevron, of which there is no less than a full English mile in length, over the arches and ribs of the nave vault alone.

From the arrangement of the western bays, it seems probable that the nave was intended

* In the writer's judgment, Warkworth is the best example of a border castle, as it is left unaltered; roofless, but with its 14th century keep and earlier barbican almost intact.


PLAN OF DURHAM CATHEDRAL.
THE NORTH AISLE OF THE NAVE
THE NAVE
THE SOUTH AISLE OF THE NAVE
THE CLOISTER
THE NORTH AISLE OF THE CHOIR
THE CHOIR
THE SOUTH AISLE OF THE CHOIR
THE CENTRY GARTH

From Canon Greenwell's Guide (Andrews & Co., Durham).

to have been longer, which Edward, its architect, possibly curtailed by one bay, fearing to place the ponderous weight of his western towers too near the treacherous ground at the edge of the cliff. The absence of ornament upon Carilef's masonry is as remarkable as the profusion of Flambard's. The character of Carilef, we believe, was as much opposed to the outward form of ostentation or luxury as the disposition of St. Cuthbert, the ancient patron, was intolerant of women, who forbade their presence beyond certain limits which may even now be seen by the dark marble line in the pavement of the western end. Historians tell us his body saw no corruption for four hundred years, more or less, and when a lady of high rank—disguised as a monk—endeavoured to pass beyond this limit, she was forbidden by the sepulchral voice of the entombed prelate.

The unusual massiveness of the alternate piers is due not to the ordinary vaulting shafts, but to the great responds which carry the ceiling arches in both nave and transepts. In the transepts the full width of the responds is given to the cross arches, which are five feet thick, and the diagonals spring from corbels. In the nave, however, the monks broadened their vaulting area by reducing the cross arches by twelve inches, so that the outer shafts of Flambard's responds were left for vaulting; but these had to be supplemented with corbels in order to carry the twenty-five inch width of the diagonals at the springing, which is fifty-four feet from the floor of the nave, or about five feet below the clerestory floor and fourteen above that of the triforium. The rise of the nave vault is twenty feet, or rather more than double that of the aisle. It is to be regretted that the fine vault of the lantern tower, whose apex is 155 ft. from the pavement, is hidden by a temporary wooden ceiling. The gallery above the tower arches, with effective wall arcading, windows, vault, belfry and parapet, which finishes without pinnacles at a height of 218 ft., was designed in the second half of the fifteenth century; whereas the upper stages of Flambard's western towers were built two-and-a-half centuries earlier, their parapets being added later.

It would be impossible, we think, to find two more ornamental doorways than those on the north and south sides of the nave, erected by Galfred Rufus (1133–40); or a more beautiful example of that period, on a smaller scale, than that leading from the cloisters to the nave (by which the Sunday processions entered), designed by Richard, Bishop Pudsey's architect. The external part of the north portal was mutilated by Wyatt, when he hacked and scraped 1,100 tons of stone from the exterior of this great Benedictine church.

On the death of Rufus, in 1140, the castle

Wilkinson, Durham.

South Doorway of Nave (1133-40), Durham Cathedral.

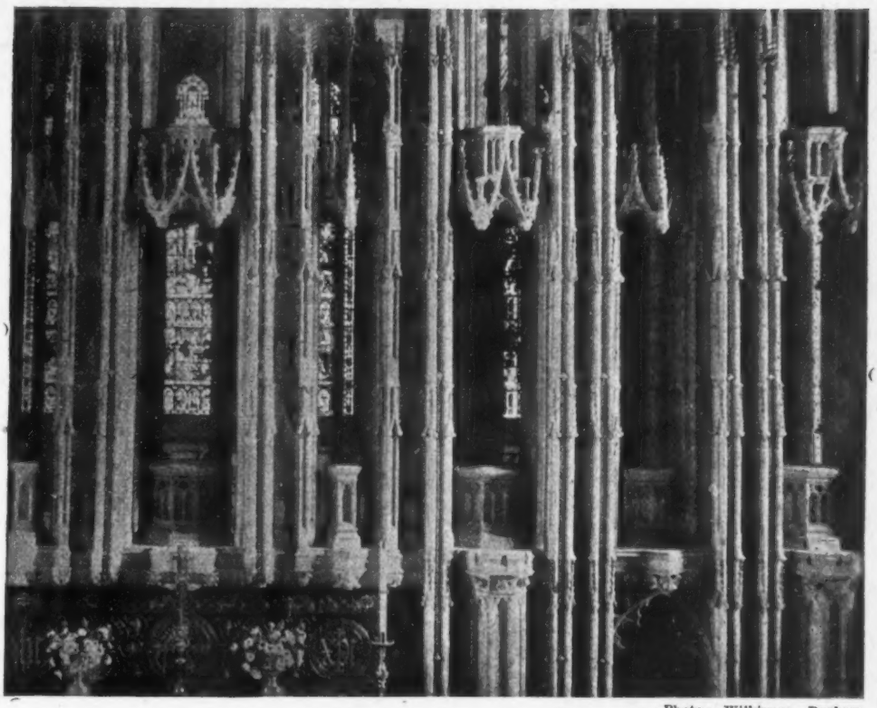


Photo: Wilkinson, Durham.

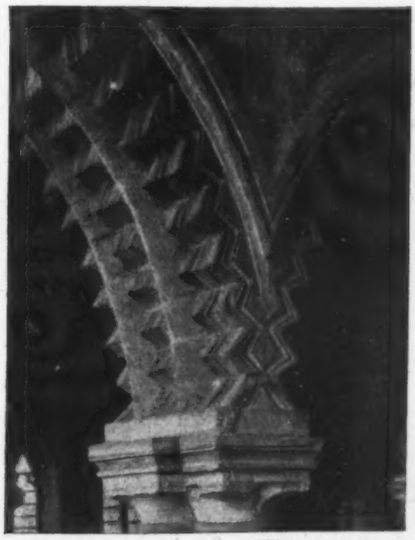
The Reredos, Durham Cathedral.

was seized by his clerk, William Cumin, ex-chancellor of David of Scotland, who vainly endeavoured by every unscrupulous artifice to maintain his hold on the bishopric. The usurper, availing himself of the extraordinary natural position of the see, in defiance of every effort by Church and State to dislodge him, held it successfully for over four years. His only opponent of importance was Archdeacon Ralph, a natural son of Flambard, whom he reduced almost to beggary.

We now come to the work of Pudsey (1153–95), famous as a builder, not only of the Galilee, but throughout the diocese. His architect was Richard of Durham, who replanned the castle of Norham-on-Tweed, as Flambard's fortress there had been wrecked by the Scots. During the long episcopate of his patron, he added the beautiful dining-hall—now used as the episcopal chapel of the diocese—at Bishop Auckland, whose manor house was even then attached to the see. About 1173, the Galilee or Lady Chapel was commenced at the east end; but at an early stage cracks appeared in the walls, caused, as the early writers suggest, by the intervention of St. Cuthbert; the work was abandoned at the command of this intolerant champion of his sex and recommenced at the west end. The formation of a chapel within a parallelogram of seventy-seven feet north to south, and forty-nine feet east to west, would puzzle the ordinary orthodox ecclesiastical architect, especially if the correct orientation of his altars was to be observed. And how did Richard the architect do it? Not by adhering to ancient custom, but by his own versatility of design and the exercise of true art, which triumphed over all difficulties. He used the exterior of Flambard's western façade as his east wall, with its side portals as entrances to the chapel, and formed recesses in the depth of its huge buttresses for its altars, dedicated to St. Bede and Our Lady of Pity. He divided the greater breadth into five equal compartments by four arcades east and west, each having four equal bays. The three central divisions formed the body of the chapel, an aisled chancel lighted by clerestories; while the north and south divisions formed outer aisles with "lean-to" roofs. Within the middle of the chapel stood the shrines of the Saxon historian, Bede, and of Langley, who strengthened the west wall of the fabric with enormous buttresses and sandwiched the graceful marble shafts supporting the arches with sandstone shafts with mock capitals, thus converting beauty into commonplace, and then built his own Cardinal's tomb within the chapel he had thus made secure.

If the reader has seen some of those light and gracefully arcaded cloisters of France, with their narrow arches resting upon a pair of slender marble shafts—the space between them bridged by narrow capitals carrying the springers stones—reduced to their minimum of strength for beauty's sake, he may more readily imagine those in Pudsey's Galilee at Durham, where against the east and west walls the responds remain unaltered, untouched by the rude hand of time. In the days when kings and prelates worshipped at the gorgeous shrines with which the chapel was stored, the rude handiwork of the Cardinal might have escaped observation; but now, in its desolation, with nothing left to mark its purpose, we lament over the evidence of Langley's well-intentioned clumsiness.

It is now time to consider a few points about



Wilkinson, Durham.

Detail at Springing of an Arch. The Galilee (1175), Durham Cathedral.

the eastern transept. As we slowly traverse the length of 200 ft. of the nave, we marvel at the great contrast betwixt the work we have just left and that of Flambard. What sort of craftsmen were those who fashioned the vertical mouldings of yonder cylinder, or cut deep those great chevrons—nearly six feet from centre to centre—in their circumference, or gouged with no uncertain hand those spiral mouldings—six inches wide—from base to capital? They were great craftsmen, whose ideas were reproduced on a smaller scale at Lindisfarne. The construction of the stonework of the circular piers proves that such ornamentation was from the first intended. Severe as Carilef's work is, this form of decoration was his conception, carried out upon the composite cylinders in choir and transepts.

As we approach the westernmost arch of the great tower, where stood the wondrous screen with its nave altar, we may notice the colossal size of the arches of Carilef's central tower, about forty-seven feet square at the base; and we wonder at the cause of the removal of Bishop Cosin's carved screen, on which the organ formerly stood, whose interesting parts are now distributed here and there about the castle; and what motive—beyond its greater durability—could have prompted the preferment of its present marble substitute. Bishop Cosin, whose architect was James Clement, was a man of taste and energy, who employed carvers of no mean ability—as the reader may see by the imposing group of choir stalls with canopies made about 1665–70—and who also built the grand carved staircase to the Norman gallery of the castle.

The Palatinate See was at its utmost height of wealth and pomp in the fourteenth century, when Bishop Hatfield erected the episcopal throne, with its seat ten feet above the pavement, to accommodate the Bishop and two attendants, and his own splendid tomb, both united in one masterly design, on the south side of the choir.

The great wheel window, the work of Wyatt's masons, which took the place of an earlier and smaller one, is nearly thirty feet in diameter, the original being probably inserted in the fourteenth century, and taking the place of the three upper central lancets of the Nine Altars. Other large and interesting windows of the Cathedral seem to have been inserted about the same medieval period. At the end of the choir—132 ft. in length—stand the remains of the once majestic reredos, mutilated indeed, but still beautiful, behind which is the great raised platform—forty feet in length and of proportionate width—on which stood the magnificent shrine of St. Cuthbert, one of the most venerated men in northern Europe. It is somewhat remarkable that such high tribute should have been bestowed upon this austere Saxon recluse of Lindisfarne by the Norman ecclesiastics, the persecutors and oppressors of his race. The eastern transept was despoiled at the Reformation of its nine altars, which ranged along the east wall on a single platform of two steps, more than 130 ft. in length. Note those nine tall lancet windows, under which the altars stood, three in each of the three compartments into which the transept is divided by the two great cross arches which, as it were, unite the great arcades of the earlier choir with the later transept.

The north and south divisions of the transept, being longer than the middle one, presented but little difficulty in the scheme of its groined vault. The former are sub-divided into three compartments, each containing its upper and lower tiers of lancets with wall passages midway. It was here that the difficulty of vaulting arose, as the responds on the west side were not—nor could they be—built opposite the eastern ones, owing to the choir aisle being about five feet wider than its opposite compartment. To have vaulted each separately could hardly have been done with success, even by the craftsment from Fountains, who were imported here for the purpose. The puzzling problem was, however, solved by embracing two bays with one vault and sub-dividing it by a deflected arch, going five feet towards the south, just touching the outer rim of the central boss, on the way to its western respond. The south or end bay was vaulted with a simple quadripartite, with the addition of a half-rib meeting the keystone from the middle of the south wall. The opposite division of the transept was treated in exactly the same way. It is probable that many experiments were tried with the vaulting, as the work was spread over a long period. The enormous strength of its buttressed and turreted walls, carried down ten to fourteen feet to meet the rock, proves that the builders did not intend to have any failure, such as Pudsey had met with on the same ground a century earlier.

In Durham Cathedral we have probably the finest of Norman churches, built—half for prayer and half against the Scot—by men who were warriors as well as Churchmen, whose Bishop lived in the stoutly defended castle. Scarce two hundred yards apart, the Prior, the Canons and numerous officials, monks and artisans, lived in the exercise of their religion and art, and often died in their defence. Yet it was this great race of builders—great also in the art of war, in organisation and in chivalry—which grievously oppressed the vanquished Saxon franklins and harassed even the poor. We know them as the successors of the art of Rome, who made immortal fame in every county with abbey church and "donjon-keep," with noble portal and giant arch. They are the record of a nation, conquerors, but conquered in their turn by Saxon endurance and Saxon fortitude, the nation strengthened by the fusion of the races. Their works are the heritage of the people—let the people shield them from further so-called restoration—and Durham is to a large degree the noblest of them all.

There on its hill stands the mighty church of Durham, gold-bright at sunrise, gold-red in sunset mist, veiled in the moonlight, majestic and matchless. Religion borrows from the chords of art, and art, from religion's tone; and, like the eagle that hails the sun, "They sing together of power and of praise."

ARCHITECTS' & SURVEYORS' FEES FOR HOUSING SCHEMES.

THE Ministry of Health has decided that the fees payable to architects and quantity surveyors in private practice for professional work which may be charged in the accounts of State-aided housing schemes, and rank for financial assistance, shall be according to the scales set out below, which have been framed on the assumption that properly-qualified members of the respective professions will be employed. The scale adopted is that agreed between the Royal Institute of British Architects and the Ministry, and has also been approved by the Board of Agriculture and Fisheries and the Scottish Board of Health. There are slight alterations from the published R.I.B.A. scale, but they are mainly in the favour of architects. The fees of quantity surveyors were agreed to by the Quantity Surveyors and adopted by the R.I.B.A. The scale is the result of long negotiations between Mr. John W. Simpson, President R.I.B.A., and the Ministry, in the early stages of which he was assisted by a strong delegation from the R.I.B.A. Council.

Architects' Fees.

No charge to capital account will be allowed in respect of the preparation of schemes which are not approved by the Ministry of Health. Special arrangements may be required in exceptional circumstances, but for ordinary cases the following scales of fees and arrangements shall apply:—

Preparation of Lay-out Plans.—For the preparation of a plan or scheme from existing maps, showing roads, builders' plots and buildings in block, including conferences with local authorities and their officials, surveying, levelling, and preparation of contour plan, lay-out plan (where necessary) to 1/2500 scale, and detailed lay-out plan or plans to 1/500 scale, but exclusive of the preparation of detailed plans of buildings:—

For the first 25 houses ..	£1 per house.
For the next 75 houses ..	10s. per house.
For the remainder	7s. 6d. per house.

In cases where the number of houses has not been determined, the fee shall be based on an average of 10 houses per acre. Where a fully-contoured plan of the site is provided by the local authority, a deduction shall be made in respect thereof, from the fees above stated, of £1 per acre.

Roads and Sewers.—For preparing working drawings, specifications and quantities for roads and sewers in accordance with the lay-out plans prepared under Section A, advising on the same and on the preparation of contract, furnishing to the contractor one copy of the drawing specifications and quantities, general supervision, issuing certificates, measuring up, passing and certifying the accounts:—

For the first 25 houses ..	£2 per house.
For the next 75 houses ..	£1 per house.
For the remainder	15s. per house.

Cottages and Flats.—For taking instructions, preparing sketch design, making approximate estimate of cost, preparing drawings and specifications, obtaining tenders, advising on tenders and on preparation of contract, selecting and instructing consultants, furnishing to the contractor one copy of the drawings and specifications, and such other details as are necessary for the proper carrying out of the works, general supervision, issuing certificates for payment, and passing and certifying accounts:—

5	per cent.	upon	the	first	12	cottages or flats.
2½	,,	,,	,,	next	60	,, ,,
1½	,,	,,	,,	remainder.		

This scale covers the ordinary variations in type of house and such modifications as are made to avoid monotony in appearance. Save in exceptional circumstances, it is not desirable that any one architect or firm of architects should be entrusted with more than 250 houses in any one scheme, but the fees payable in respect of each 250 houses shall be calculated as above, whether or no several architects be employed thereon.

Quantity Surveyors.

For the preparation of bills of quantities:—

2 per cent. upon the first 12 cottages or flats.
1 per cent. upon the next 60 cottages or flats.
⅝ per cent. upon the next 178 cottages or flats.
½ per cent. upon the remainder.

This scale covers the ordinary variations in type of house, and such modifications as are made to avoid monotony of design. For measuring variations on the contract and adjusting the final accounts, the remuneration shall be at the rate of 1½ per cent. on additions, and 1 per cent. on omissions brought into account. The above scale is exclusive of all disbursements in respect of printing, lithography, and other out-of-pocket expenses.

The above scales of fees are intended to include all necessary duties of an architect and surveyor incidental to the carrying out of the work, including such duties as are involved in complying with the requirements of the Ministry of Health. The conditions of engagement of architects and surveyors shall be those which are customary in the respective professions; for example, generally, such as the conditions prescribed by the Royal Institute of British Architects in the case of the engagement of architects.

Conference of Employers and Employed.

The success of the three days' Conference of Employers and Employed recently held in Birmingham by the Industrial League, has encouraged them to arrange to hold similar Conferences in Glasgow, Newcastle, Manchester, Bristol, Portsmouth and Sheffield, and negotiations are being conducted in other places. All subjects relating to labour and commerce will be considered.

MODERN ARCHITECTURE.

AN admirably-written article, under the above heading, appeared in a recent issue of the *Times*. We give below abstracts from the article and the correspondence which followed:—

"Anyone who has been engaged in drawing and measuring a mansion, say, of the seventeenth or eighteenth century, must have been struck by the opulent scale and proportion of its details as compared with the most costly building of the same class erected in the present day. The thickness of the walls, the depth of the window recesses, the boldness of the mouldings, the depth and projection of the cornice seem to express the taste and aims of a generation of more ample and vigorous life than our own. Yet the difference may be traced rather to a system than to any conscious intention on the part of architects, builders and clients. In a word, the present-day building is erected 'by contract'; the seventeenth century building was not. Let us consider the process more in detail. Where first the idea took possession of the mind of the building owner that he must know the exact cost of his building in advance and obtain a legal contract for the carrying-out of it for a specified sum; the building contractor, of course, for the protection of his own pocket, must know exactly what amount of each material used in the building he had to supply; hence arose the operation called 'taking out the quantities,' viz., calculating from the drawings supplied by the architect, how many cubic feet of stone, brick, etc., would be required, how many 'feet run' of this or that cornice or moulding, how many square yards of flooring, and so on. In the first instance, this quantity-taking was done by the builder at his own cost, as a means of self-protection; but the time came when the builders, as a class, rebelled against this tax on their time, and required the 'quantities' to be supplied to them at the cost of the building owner. Hence arose the separate profession of the 'quantity surveyor,' now a large and important profession, numbering many able men. But all this, it must be obvious, has nothing on earth to do with architecture; it is not really of the slightest consequence to the architect or the owner how much of any material is employed in the building—it is only of consequence to the contractor. To him and to the quantity surveyor the building is not architecture at all; it is only so much material to be put together; and, probably in many cases, the nominal builder, the head of the contracting firm, never sees the drawings or the design of the building at all; he estimates on the 'quantities supplied.' Now, on the top of all this, comes the desire of the building owner to get his building as cheap as possible; so the quantities are supplied to a selected number of builders, who are invited to state respectively for what sum they will carry out the building, and (unless there has been a special *caveat*, 'the lowest tender not necessarily accepted') he who will do it cheapest is selected; with the result sometimes that the selected builder leaves himself so narrow a margin for profit as to be under a painful temptation to scamp the workmanship in some way not too obvious to the eagle eye of the architect. Thus, architecture, which should be a great and noble art for the embellishment and pride of cities, and carried out with that object pre eminently, is reduced to a kind of business of getting a presentable result at the least possible cost, and, in general, it may be added, in the shortest possible time; for in too many cases (in town architecture especially), a new building is regarded by its promoters not as architecture, but simply as 'property,' on which money has been expended, and which must be hurried up in order to make money returns out of it as early as possible. An essentially commercial generation may argue that this is the only logical, reasonable and business-like method of procedure. It may be business, but it is not architecture, which is essentially not a business, but an art. Not on such a system will arise such a civic architecture as will leave 'no complaining in our streets.' No great architecture ever has been or ever will be produced on the basis of building as fast and as cheaply as possible."

In the ensuing correspondence, Mr. C. McArthur Butler, Secretary of the Society of Architects, suggested that the author of the article was in error in thinking that the system of erecting buildings by contract was a modern one, and that architecture could not be produced on such a basis. He submits that from time immemorial it has been the custom to count the cost before embarking on building schemes. An essentially commercial generation, he thinks, is not likely to depart from this custom, nor is it necessary that they should abrogate this principle in order that architecture may flourish. All that is required is that they should realise that (*a*) the production of architecture is not a question of cost, but of ability to apply the principles of architectural design to a building; (*b*) that architecture is an asset of great commercial value to the locality and individual concerned; (*c*) that architecture can be produced only by the employment of skilled architects; and (*d*) that it is less costly to erect a building of architectural merit than it is to put up a monstrosity. Architecture not only should be, it is, a great and noble art; it is also a great and noble science. Modern architecture is also a great business, calling for the exercise not only of architectural skill, but of many more diversified talents and accomplishments than were necessary in medieval or even more recent times. It is because the modern architect has not sufficiently realised this and has paid too little attention to the commercial and business aspect of his profession, that many people look upon his services as a luxury instead of a necessity in connection with building enterprises. The result is that much work which comes within the province of a modern architect goes elsewhere, greatly to the detriment of the community from the architectural point of view. Art in this country (says Mr. McArthur Butler), and particularly architecture, is left to look after itself. In France the arts flourish under the patronage of a Ministry of Fine Arts, which embraces the Beaux Arts system of inculcating the principles of architectural design, and the public as well as architects have access to the lectures free of charge. Consequently, architecture is there a living art, whereas here it is practically a sealed book to a large majority of laymen.

In the opinion of Mr. J. W. Dugdale-Bradley, M.Inst.C.E., the article, doubtless unconsciously, gives an entirely wrong impression to the layman, especially in the statement that the selected builder leaves himself so narrow a margin of profit as to be under the necessity of scamping the workmanship, and that architecture is thus reduced to getting a presentable result at the least possible cost. He thinks that the contract system and the calculation of too small a margin of profit by the builder have no bearing whatever upon the "lack of opulent scale and proportion of details" in present-day buildings; and that any degree of opulency and proportion can be satisfactorily tendered for by the builder and carried out to the satisfaction of the architect and owner, if the latter is willing to defray the cost.

A correspondent, who signs himself "An Architect of Forty-five Years' Standing," deprecates the use of "cost-and-percentage" contracts, in which, he says, the percentage on the actual cost allowed to the builder varies from 20 to 100 per cent. over the cost of a similar building carried out by a lump-sum contract; also, the contractor is under no obligation to obtain his stores by open competition and buys in the dearest market.

EDINBURGH HOUSING COMPETITION.

THE awards in the competition for the lay-out of four areas and accompanying designs for houses, which was instituted by the Edinburgh Town Council's Housing and Town Planning Committee, have been made by the assessor, Sir John Burnet, R.S.A., Glasgow, and were given in our issue of September 5.

As will be seen, the outstanding feature of the awards is the striking success of Messrs. A. K. Robertson and T. Aikman Swan, A.R.I.B.A., of Edinburgh, who won all the first premiums. Designs were required for houses containing—

(1) Living room, scullery, coal store, larder, &c., two bedrooms and bathroom.
(2) As No. 1, but with additional bedroom.
(3) As No. 2, with parlour in addition.
(4) Tenement blocks, containing not more than six houses in each block and limited in height to ground floor, first and second floors.
(5) Flatted houses (two story).

The Wardie and the Saughtonhall sites being practically level, Messrs. A. K. Robertson and T. Aikman Swan, A.R.I.B.A., have adopted axial planning; the two remaining sites, owing to difficult contours, did not allow of such a lay-out, their general lines being dominated by the levels. Recreation grounds and bowling greens are provided, while sites are left for churches, halls and schools in the areas where such requirements are felt to be necessary. Shopping centres are conveniently situated, both for the area under consideration and the adjoining districts.

It is not proposed that cooking, in the ordinary sense, shall be done in the living room, which will partake more of the nature of the sitting-room type, for which purpose a gas cooker is fitted up in each scullery, as well as a gas boiler for washing purposes. The houses will be lighted by electricity.

A feature of the winning designs, which should be noted, is the back porch. It was felt that in Scotland the weather was too severe to have a direct access from scullery to open-air. The porch forms a convenient place for boot brushing, &c.; and an excellent means of ventilation on washing days, if the back door is left open. Then the tenements have been planned so that direct light and ventilation is obtained by means of large-sized windows direct into the lobby—thus doing away with the usual dark, un-ventilated passage on entering the house. Messrs. Robertson & Swan's plans, like all good plans, seem inevitable; the elevations are simple and beautifully proportioned with restful spacing of windows, and they have prepared special plans to suit a northern aspect, where the principal room looks down the garden, getting the maximum sunlight, while a single window gives a view to the front.

The cottages, for variety and interest, are to be built in blocks of two, four, six or eight, with a minimum of about 15 ft. between; extra interest will be obtained by the variety of materials to be used and a sparing use of breaks in the elevations. The residents in the tenements have each an allotment at the rear of the building, with a common drying green and wash-house with two tubs.

It is estimated that the four areas which the City of Edinburgh is about to build on will contain 2,884 houses, being fourteen houses to the acre.

Capital Issues.

The Treasury announces that applications for permission, under the Defence of the Realm Regulation 30F, to raise capital in this country where the proceeds of the issue are to be applied for capital purposes outside the United Kingdom will in future be dealt with by the Board of Trade. All communications with regard to either new or pending applications should be addressed to the Secretary, Capital Issues Committee, Board of Trade, Gwydyr House, Whitehall, S.W. 1.

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ILLUSTRATIONS.

War Memorial Church.

We illustrate this week a model for a war memorial church, from the Royal Academy Exhibition, by Sir Edwin L. Lutyens, A.R.A.

New Warehouse, Bow Road, E.

In this building an attempt has been made to deviate from the usual type of warehouse. The structure is of reinforced concrete cement rendered externally, with metal frames carrying the glazing. There are three floors and receiving and despatching quays—the building being equipped with overhead runways on all floors, so that an efficient service will be provided to and from the quays. The building is part of a proposed development of a large site which will ultimately provide for the business needs of a commercial firm—factory, warehouse, offices and flats for employees. The perspective drawing was exhibited in the Royal Academy, the architect being Mr. F. Milton Cashmore, 18, London-street, W. 2.

Premises for the Plymouth Mutual and Industrial Society, Ltd.

This design, shown by the perspective drawing hung in the recent exhibition of the Royal Academy, was submitted in competition by Messrs. H. H. Archer, A.R.I.B.A., and F. Milton Cashmore. The building was of steel-frame construction, the external piers being of Portland stone, with an infilling of metal grilles carrying the glazing, and a frieze and piers of black marble at the ground floor enclosing the show cases.

The Main Entrance, Manchester Royal Exchange.

The completion of the Royal Exchange at Manchester has been seriously delayed owing to war conditions and the more recent difficulties in regard to both labour and materials, but the greater portion has now been finished and much of the building is in occupation. Messrs. Bradshaw, Gass & Hope, FF.R.I.B.A., architects, of Bolton, had their design of the main entrance carried out as in the last exhibition of the Royal Academy. The whole of the outside of this building and the entrance, as illustrated this week, are faced with Darley Dale stone, which has a pleasant, warm tone and lends itself well to the architectural treatment of the building. Messrs. Jas. Thornton & Sons, of Liverpool, are the contractors, and the elaborate system of reinforced concrete used in the building is being carried out by Stuart's Granolithic Company.

Durham Cathedral.

We also give a view of Durham Cathedral, an article on which appears on page 288.

London.

The City Corporation has received a report on the proposal to erect 13 blocks of dwellings in South-east London, and 2,000 houses between Higham's Park and Chingford, to accommodate about 10,000 persons, at a total estimated cost of £2,000,000. The Technical Commissioner to the London Housing Board has intimated general approval.

EXHIBITIONS OF THE WEEK.

Opening of New Exhibition Galleries.

The National Portrait Gallery.

THE opening on Wednesday, September 10, of Messrs. Derry & Toms' new exhibition galleries proved a very successful function, and, in spite of the tempting weather conditions outside, was well attended.

Besides the Exhibition the special programme consisted of a series of Folk Songs in Costume by Mrs. Jan Poortenaar (Miss Geertruda van Vladeracken) who is described in the programme as the Yvette Guilbert of Holland.

She was accompanied at the piano by her husband, Jan Poortenaar, whose etchings, lithographs, woodcuts, and oil paintings form the main feature of the present exhibition. Jan Poortenaar, whose work we have noted also at the Burlington Gallery, is a draughtsman and etcher of power and originality: all his work shown here is strong and vigorous, and this applies to his architectural studies as well as to his pure landscape or figures. In his "Roman Catholic Cathedral," the lofty tower of Westminster Cathedral emerges in shadow, and soars upwards; and there is a fine massing of shadow, almost reminiscent of a Piranesi plate, in the great arch of his "Rainy Night, Embankment"; good handling of detail in the "Gateway of St. Bartholomew's," and "The Belfry, Bruges"; and fine quality in his etched plate of the "Jerusalem Chamber, Westminster," though his etching of "Amiens Cathedral" did not appear to us so successful.

A special word is due to his lithographs here. In this medium, with its soft rich depths of shadow, Poortenaar shows himself at home in his wartime studies of "Piccadilly Circus in Wartime," and "Searchlights," while his "Bridges of Newcastle" and "St. Paul's Cathedral" show the grasp of structural design which we have noted already. A good contrast is afforded by Mr. W. E. Forster's pastels. Luminous atmospheric effects are sought, and, on the whole, rendered very successfully in "Summer Morning in an Airship," "Winter Fog in the Appenines," "After a Storm" and "The Plain of Tuscany," a wide expanse of landscape like that which extends, in Umbria, from Perugia to Assisi.

The Trustees of the National Portrait Gallery are pressing for an extension of their present premises, on the ground that while the collection has increased, the accommodation has remained stationary for twenty years. They hope "in the near future to be able to add to the collection certain important groups of persons distinguished for their services to the Empire during the war, the gift of a generous benefactor," and consider that the time has arrived when the much needed extension of the building, so long overdue, should be made on the vacant site already allocated.

MEETINGS.

September 25–29.

Town-Planning Institute.—Conference at Oxford.

September 25 & 26.

Royal Archaeological Institute.—Autumn meeting at St. Albans.

COMPETITION NEWS.

Glasgow.

The premiums in the housing competition held in conjunction with the Housing and Health Exhibition, have been awarded as follows:—

Lay-out and house plans for sites at Kennyhill, Riddrie, Blackhill and Lethamhill:—1st Premium (£400).—No design of sufficient merit; 2nd Premium (£250).—Mr. Alex. T. Scott; 3rd Premium (£150).—Messrs. F. L. Thompson, R. Dunn and S. Pointon Taylor; 4th Premium (£100).—Mr. C. H. Norton.

Lay-out and house plans for three-story tenements at Coplawhill:—1st Premium (£150).—Messrs. Cruockshank & Seward; 2nd Premium (£100).—No design of sufficient merit; 3rd Premium (£50).—Messrs. W. E. C. O'Venden and Mr. M. Stark; extra awards of £25 each.—Messrs. C. Mitchell and W. Friskin.

Lay-out of sites at Mosspark:—1st Premium (£150).—Messrs. F. L. Thompson, R. Dunn and S. Pointon Taylor; 2nd Premium (£100).—Mr. J. Coutts; 3rd Premium (£50).—Messrs. H. Slicer and W. Friskin.

Lay-out of land between Shettleston and Tollcross:—1st Premium (£200).—Messrs. F. L. Thompson, R. Dunn and S. Pointon Taylor; 2nd and 3rd Premiums (£100 and £50).—Divided between Messrs. A. J. Price & Sons and H. Slicer.

Improving area between Springburn-road and Springburn Park:—1st Premium (£200).—Mr. J. B. Brodie; 2nd Premium.—No design of sufficient merit; 3rd Premium (£50).—Mr. W. A. Robertson.

Model of semi-detached cottages of 4 or 5 apartments:—1st Premium (£100).—Mr. D. Skinner; 2nd Premium (£50).—Mr. W. E. Bannister; 3rd Premium (£25).—Mr. C. G. M'Gibbon.

Model of two-story block of two houses of 3 or 4 apartments:—1st Premium (£100).—Mr. D. Lawrie; 2nd Premium (£50).—Mr. J. W. Reid; 3rd Premium (£25).—Mr. D. J. Cameron.

Model of two-story block of 4 houses with 3 apartments each:—1st Premium (£100).—Mr. D. J. Cameron; 2nd Premium (£50).—No award; 3rd Premium (£25).—No competitor; special award of £25 for this and previous competition.—Mr. W. E. Bannister.

Plan of house with fitments and equipment:—1st Premium (£100).—Mr. M. Stark; 2nd and 3rd Premiums (£50 and £25).—Divided between Lieut. A. Douglas-Smith, Mr. D. J. Cameron and Mr. W. A. Robertson.

Oxford.

FOR THE CITY COUNCIL.—Designs for the lay-out of a congested area in the centre of the town. Mr. H. V. Lanchester, F.R.I.B.A., will act as assessor. Sending-in day, October 20. Further particulars from the Town Clerk. (See our advertisement pages, August 15.)

Leamington Spa.

FOR THE WAR MEMORIAL COMMITTEE OF THE TOWN COUNCIL.—Designs for a war memorial. Premiums £100, £50 and £25. Mr. H. V. Ashley, F.R.I.B.A., of 14, Gray's Inn-square, W.C., will act as assessor. Further particulars from the Town Clerk. Sending-in day, October 15. (See our advertisement pages, July 25.)

Ideal (Labour-saving) Home.

In connection with the Ideal Home Exhibition, to be held at Olympia from February 4 to 25, 1920, the *Daily Mail* is offering prizes for designs for a "labour-saving" house. The prizes are £250, £100, and £50. Sending-in day, October 4. Further particulars may be obtained from the Secretary of the Competition 130, Fleet-sreet, London, E.C. 4.

Portishead.

FOR THE URBAN DISTRICT COUNCIL.—Designs for lay-out of block of houses. Premiums £50, £30 and £20. Mr. C. F. W. Dening, F.R.I.B.A., and Mr. F. H. Smith have been appointed assessors. Sending-in day, October 31. Further particulars from Mr. F. H. Smith, Surveyor, Council Offices, Portishead. (See our advertisement pages to-day.)

SUMMER QUARTERS IN MESOPOTAMIA.

By CAPTAIN A. G. PITE, M.C., R.F.A.

LITTLE knowledge, it is true, is dangerous, but when it is all that there is the risk must be run. Action, not timidity, is required when a body of some thousand Englishmen have to face their first summer in one of the hottest climates in the world. Their first instinct is to turn to the man who has been East before. He at once launches into an enthralling account of "punkahs" and "chatties," and dilates on the importance of mosquito nets and the siesta. It soon becomes clear that his experiences were in cantonments, not under canvas; and that, at any rate, he did not have to make all his own arrangements, or, as he would say, "bandobast." Such news is useless, as the necessary ingredients are not to hand. Their second is to turn to the official pamphlet. This however, deals exclusively with "the fly-proof latrine" and the "haddick cooker." Though, undoubtedly, of the first importance, this is not exactly inspiring to the prospective settler. The veterinary section adds massed information on the incineration of manure, and the A.D.M.S., as always, aims in body and print at the cook-house. But though much is learnt, both of the special dangers and the best remedies, yet, usually, the larger questions are left unanswered.

The greatest of these is, undoubtedly, how to keep cool. This is passed by without reply, because, as the event proves, it cannot be done. But, forthwith, schools of thought arise, which dispute with the fervour of theologians about their rival theories. They divide, roughly, into two divisions—the subterraneans and the ground levellers. The diggers emphasise the double need of avoiding the sun's rays and of darkness to be cool, while the others will risk the light of day for the sake of the ground breeze.

The application of these two principles is instructive. But the best illustration will be to describe what actually occurred. The camp site was among the ruins of old Samarra, at one time capital of the early Caliphate. The city has crumbled in the course of centuries to desolate rows of low mounds, 2 to 10 ft. in height, scattered for miles along the banks of the Tigris. The bricks have turned to earth again and the mortar to the finest dust. Here, the river flows south-east with sandstone cliffs on the left bank, some 30 to 40 ft. high, broken up by shallow nullahs every 50 yards. A long shingle beach with an easy approach offers splendid watering for horses at this point. The first problem was the plan of the camp, that is, the relation of men's lines to horse lines, and the alignment of the tents. The deciding factor in this was the "Shamal"—the north-west wind which blows steadily from May till September, and is the saving feature of the summer climate in that part. This meant that on most days the dust would blow in the one direction. So the camp was laid out in lines at right angles to the river, the men's lines to the north-west, the horse-lines to the south-east. The tents were pitched on the ridges between the nullahs. The result was satisfactory, as apart from an occasional east or south wind, which did not usually blow more than one day a week, the worst of the dust drifted away down stream.

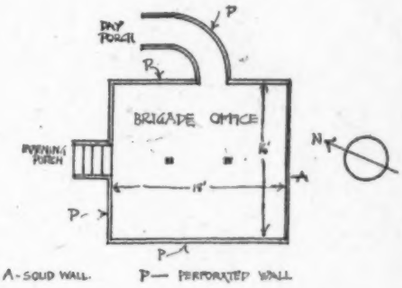
The camp pitched, the first thing was to erect mangers, harness and forage sheds in the horse lines, and cook-houses and latrines for the men. Fortunately, a fortnight before, some two or three men had been attached to the sappers, to learn the construction of a special incinerator, and had there seen a small brickfield. As there were some brick-makers, as well as bricklayers in the unit, one was started at once. The fitters turned out some moulds, the best earth was selected by the master brickmaker, a water supply was arranged (Indian followers, buckets (G.S.) and the Tigris), and the work began. The sun-dried bricks took some three days in manufacture, the recipe being earth, water, dried manure and the sun. They baked hard right through, and, judging from the relics of camps of earlier seasons, would have stood for two or three years; at any rate, they lasted without noticeable wear as long as we required them.

As soon as the cookhouses were started, the roofing question arose. There were a few sheets of corrugated iron, collected at various points on our wanderings, and some rolls of "chittai" matting, made of coarsely-plaited rushes. The frame-work had to be made of a species of hop-pole, no other timber being available in any workable lengths. This prevented the construction of thick mud roofs, the best for coolness—the first experiment showing the tremendous weight of even a ½ in. layer of mud. In fact, the only roofs where even the thinnest coating could be laid were those over sheds specially designed for a single sheet roof.

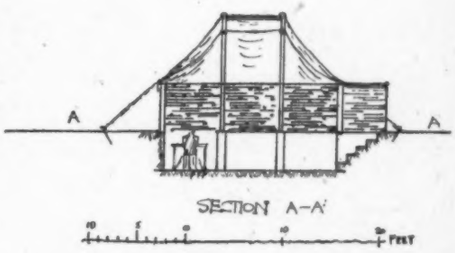
When the sanitary arrangements were finished, a larger field was opened to the imaginative designer. Work could now be begun on the tents. Offices and messes had to be made habitable and the most varied plans were tried. The Brigade office, with its seventeen-hour day, clamoured for improvement. The subterranean school governed the design here. The problems were two—to cool it and keep out the dust storms. Neither completely possible, but in both cases every effort was of use.

There were two interesting expedients employed which proved themselves during the summer. The first was the substitution of many small holes for windows, the walls being built in Flemish bond, one brick thick, with the headers left out in every third course. Through these every breeze found its way, and yet no ray of sunlight penetrated until late in the evening. The south wall was, however, left solid, as the wind, if any, from that quarter was always hot. During a dust storm, the tent walls were drawn round the outside, so that the dust only drifted down from the roof. The second experiment was digging down inside the tent to the depth of about 4 ft., so that the breeze should still be felt on the head of anyone sitting at work. The scheme was completed by the construction of a long, curved, sloping porch, also designed to catch the breeze and exclude the light.

This method succeeded admirably for a tent for day use. When finished, it proved to be five or six degrees cooler than other tents. The disadvantage of such a system was that the walls absorbed the heat and retained it far into night; but as this tent was then unoccupied, it did not much matter. With the designing of messes, however, the problem was different. The "ground-levellers"



[The evening porch was closed with the tent wall during the day. The day porch was roofed with matting.]



constructed the most comfortable one in the camp—for the evening, at any rate. It was built on the top of a bluff, and was above, rather than below ground level, and was left unwalled. As soon as darkness came, it cooled with the evening air, and when the tent walls were rolled up admitted every passing breath of wind; but at mid-day, or in a dust-storm, it was little better than the bare plain.

It is easy to be wise after the event, and at the end of our experiments we could see that the Arab's habit of spending the day in his cellar and the night on his roof should have guided us through-out. We discovered the same principles, it is true, but "not without dust and heat."

Edward the Confessor's Palace.

Some interesting discoveries have been made by Capt. V. Williams at what is supposed to be the site of the palace of Edward the Confessor, in Windsor Great Park. The wall of a courtyard, 65 yds. in length, is being uncovered, and one of the brick walls which supported the drawbridge has also been unearthed. It is in a good state of preservation, the bricks measuring 13½ ins. × 4 ins. × 3¾ ins. thick. Further excavations are to be made, in an endeavour to trace the tower of the palace in the centre of the courtyard.

SIMPLIFIED CONCRETE BLOCK MAKING.

THERE are occasions upon which simplification may be brought to so fine an issue as to defeat the very object to achieve which it was introduced. The statement, paradoxical as it may sound, is nevertheless true, that extreme simplicity may alarm or at least arouse suspicion, where hitherto complexity has impressed. Thus it comes about that the view of a piece of apparatus performing a function simply and straightforwardly, with the utmost economy of energy and time, where hitherto have existed complexity of motion and diversity of operation, is apt to arouse a tendency towards scepticism as to its efficiency, and to stimulate a shrewd suspicion that somewhere there must exist some "fly in the ointment," failure to find which, ultimately yields to wonderment at the ineptitude of mankind in his delayed discovery of so simple a device.

It may with safety be said that prejudice against concrete-block construction for small houses and cottages, if not obsolete, is at least obsolescent; and nothing will hasten the advent of this desired state with greater certainty than proof that it is possible to produce blocks of a suitable type of good material, quickly and cheaply. To many who may be requiring just that assurance, a visit to the demonstration given by the Australia Concrete Block Machine Syndicate, of 608, Salisbury House, E.C., may be recommended; the machine may be seen in operation at any time by those interested in the Contractors' Yard, Australia House, Aldwych.

This machine is of astonishing simplicity in design, and is, moreover, comparatively light and portable and free from any complex mechanical parts, which may be liable to become damaged, if subjected to continuous hard wear. By means of this machine, it is claimed that an unskilled worker, or a young boy, could produce blocks at the rate of one per minute. For the outside walls, a block with a special bonding-key is required; whereas the inside partitions are built of a simple plain-faced block. By means of a very slight adjustment, the same machine can be used for the production of both these types, and, moreover, for any specially shaped pieces which may be required for door or window reveals, quoins or plinths. The thickness of the blocks can be varied to suit requirements.

For those whose æsthetic scruples permit of it, a very exact imitation of stone may be obtained with hammer-dressed, vermiculated, tooled, pointed, or any required dressing, with or without margines; but there seems, however, no reason why concrete should endeavour to assume the appearance of masonry, and effects obtained in this way are in the nature of a deceit, which must be subversive to good building. Whenever a new mode of construction is evolved, it endeavours to insinuate itself under the guise of some already accredited form, until it eventually acquires a distinctive character of its own; just as the early motor car was in appearance but a horseless carriage. Admitting the desirability and suitability of concrete construction, it should be allowed to acquire its distinctive appearance and texture. Examples exist to show that in the course of time it weathers pleasantly enough.

Although the blocks produced by this particular machine measure 12×24 in., it would be an extremely simple matter, and one entailing a very small expenditure, to adapt it for the 36 in. block, which size seems to be developing into the accepted standard. A particularly satisfactory point about the method of production is that the blocks are made horizontally, thus they can receive the required moisture in the initial stage, so that subsequent sprinkling, except in unusually hot weather, is unnecessary. The blocks are lifted from the machine on their wooden or metal pallets and laid out to dry; after about twelve hours they can be turned on end, and the pallet is released for re-use.

A cavity-wall method of construction is employed; and the system of bonding which omits all metal ties is such that it permits of an absolutely free passage of air throughout the cavity. For the inner wall, an aggregate is employed which produces a substance suitable for the absorption of any moisture due to condensation; a consideration which requires particular attention in all such systems of building.

Presuming concrete construction to be as suitable as the hitherto accredited systems of brick or stone, the final test must be one of comparative cost. In this respect many diverse considerations arise. First, there must be reckoned the initial cost of the apparatus, and as has been already intimated in the particular case under consideration, it is extremely low—a sum of £40 securing a portable machine which can turn out some 450 blocks per day. The cost of the blocks themselves must naturally vary with the accessibility of suitable aggregate, which, in some districts, is to be had at the mere price of cartage. If the aggregate is obtainable on the spot, 100 blocks cost approximately 30s., and these are equivalent to 1,068 bricks, which, at their present price, cost some 80s. The blocks for the partitions and inner work, made from an aggregate of ash, are cheaper, and cost about 20s. per hundred. A further considerable saving is effected in mortar—the amount used being about one-eighth of that which would be required for a similar area of brickwork. Finally, a comparison must be made in the cost of labour in erection, and this can most suitably be effected by estimating the number of blocks that can be laid in a day, and comparing it to a day's work at brick-laying. For ordinary straightforward work, it is claimed that the

CONCRETE BLOCK MAKING.

blocks can be laid at about the same rate that they can be turned out of the machine—that is, at one per minute, or, approximately, 450 in the day; the amount of wall built will be equivalent to ten times that number of bricks. Considered in terms of man power and estimating a day's work for one man at 600 bricks—a generous computation—in concrete block erection, one man may accomplish that which would occupy 7½ men working with bricks.

On the face of it, then, it would appear that the production on a large scale of such a machine as that indicated above, would go far towards the expedition of the present housing requirements. This is, no doubt, true. But, it may be demurred, it would be nothing short of a national disaster if this method of construction were to proceed at such a pace as to supplant all others, so that a dismal uniformity at length descended over the entire countryside, stretching from Land's End to John o' Groats. Fortunately, such an appalling prospect is highly improbable of realisation; neither, let it be added, is it here advocated.

What is required is that concrete construction be allowed to take its place along with other established systems. It may be presumed that official prejudice has, to a large extent, been overcome by the sanction given for the erection of twenty-four concrete cottages at Sundon by the Luton R.D.C. These cottages, indeed, are being constructed throughout in concrete—all floor and roof timber being dispensed with; even window and door frames are to be in concrete. There is no doubt that in districts where a suitable aggregate is at hand in abundance, a great saving can be effected with no loss, it is hoped, of general efficiency. It must surely be admitted that if the translation of a slag-heap into a row of serviceable cottages, of good appearance, can be effected, it is a desirable metamorphosis to which even the most conservative should find little objection.

Books Received.

INCOME-TAX AND SUPER-TAX, 1842–1920. Edinburgh: Oliver & Boyd. Price 1s. net.

BRITISH STANDARD SPECIFICATION FOR DIMENSIONS OF INSULATED ANNEALED COPPER CONDUCTORS FOR ELECTRIC POWER AND LIGHT, INCLUDING PRESSURE TESTS. Revised edition, 1919. London: Crosby Lockwood & Son. Price 1s. net.

THE BRITISH ASSOCIATION.

AFTER an interruption of two years, caused by the war, the British Association for the Advancement of Science resumed its annual meetings at Bournemouth last week, under the presidency of the Hon. Sir C. A. Parsons, K.C.B. The papers covered a wide range of subjects, and besides emphasising the great progress of science and engineering during the period of the war were chiefly remarkable for the attention given to industrial problems. Professor G. H. Bryan described his application of the aerofoil theory to the heating of buildings. With the usual method of placing radiators under windows, he said, the hot air was drawn to the window and passed out without touching the centre of the room. He proposed to place a deflector over radiators, arranged at an angle to be determined by experiment, which would pass the hot air from its under-side into the room; the mass of cold air between the outer side of the deflector and the window would form a non-conductor and prevent the hot air from escaping through the window. It was essential that the deflector should have a sharp edge, so as to secure a free stream of hot air; with a rounded edge eddies of hot air were produced which did not carry so far into the room. Prof. Bryan had tried the apparatus with considerable success at Bangor.

None of the other papers dealt directly with architectural or building matters, and we give below some of the remarks which were of more general interest.

In his inaugural address, the President remarked that, failing new and unexpected discoveries in science, one could not but realise that with the present trend of developments in utilising water power and using up the fuel resources of the world, the great position of England could not be maintained indefinitely. Long before the exhaustion of our coal, the population would gradually migrate to countries where the natural resources were the most abundant. England possessed less than one per cent. of the water power of the world and only 2½ per cent. of the total coal of the world. England owed her greatness to coal, upon which she must continue to depend almost exclusively for heat and power. Nevertheless, we were using up our resources much more rapidly than most other countries. The whole question of the future resources of the Empire was one which demanded the serious attention of all scientists, and it should be attacked in a comprehensive and insistent manner. Through the Department of Research the Government was rendering great encouragement and assistance in the matter.

In a review of the industrial position, Sir Hugh Bell referred to "the widespread tendency towards what is sometimes called nationalisation." He said that even in so simple a business as collecting and distributing letters the Government control had not been an unqualified success, and in more complicated businesses under Government control the success was even less conspicuous. With nationalisation, all incentive to gain would disappear, and with it the readiness to take risks, without which no growth of employment could take place. With regard to wages, employers could be compelled by Parliament to pay a certain wage to a workman, but it could not compel the payment of a wage which the price of the article produced would not suffice to pay—the workman would remain unemployed. The only way by which higher wages could be obtained was a greater product per unit of capital and per unit of wage. No fundamental objection could be raised to the participation in management by employees, and the more completely an industry was understood by the men engaged in it, the better it would be for all concerned. If they were to have more to divide, there must be a larger production, and this would not be effected by any form of restriction of output.

With regard to Lord Leverhulme's suggestion that two six-hour shifts per day should be worked in factories, instead of the usual eight-hour shift, Dr. H. M. Vernon did not think that the available evidence indicated that the adoption of the system would result in much improvement of output in many industries. In the tin-plate trade it was found that the hourly output for a six-hour shift was only 10 per cent. greater than for an eight-hour shift. The reduction of hours from twelve to eight in the blast-furnace and rolling mill industry caused no increase of hourly output, and only from two to nine per cent. increases were noticed in the case of the open-hearth furnace industry. In some industries the output was controlled by machinery, and in these cases no increase could be expected. He hoped that some such scheme as that proposed by Lord Leverhulme would be adopted, but he thought that it should be applied gradually. He also thought that the workpeople should spend two hours per day in educational and physical training, in addition to the six hours in the factory.

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NOTTINGHAM HOUSING COMPETITION.

THE conditions of competition issued by the Nottingham Housing Committee for the Sherwood Housing Scheme, were fair and generous, and ought to have resulted in a good response, but whether the local architects were too much engaged on actual work in hand or on prospective work, the fact remains that the general body of practitioners did not respond to the invitation. The premiums offered were £350, £100, and £50, and the Committee agreed to accept the assessor's decision, and undertook to engage the successful competitor to carry out the work on terms as agreed by the Local Government Board and the R.I.B.A. The total area is 127¼ acres, but only 68¾ acres is available at present for building. Not more than 12 houses to the acre was stipulated, in pairs or in blocks of not more than six houses, in three types, viz., 4, 5 and 6 rooms. There were 25 sets of drawings submitted. The first premium was awarded to Mr. W. A. Kneller, of Nottingham; the second to Mr. F. J. North, of Hull; and the third to Mr. S. Pointon Taylor, of Harrow-on-the-Hill.

The site is well wooded, interesting, and gives plenty of scope and many difficulties on account of its undulating nature; and the fact that it slopes northwards will require special care in placing the houses. The problem has not brought forward any design of outstanding merit, and especially does this apply to the house plans. With few exceptions the competitors have failed to grasp the most essential points, which should be the first principle in the design of small houses. If the working part of the house fails from the house-wife's point of view, as well as the family, the plans must be considered below the standard necessary. Few competitors have realised, in the ground-floor bathroom types, the inadvisability of planning so that the scullery and living-room have to be passed through to reach the bathrooms. Further, a bathroom entered immediately from the scullery is often used for all kinds of purposes except the one intended. For the smaller houses, the bathroom on the ground floor should be supplied from the copper, on economical grounds, and nearly all the competitors have failed to realise this point. The placing of the copper on the opposite side of the scullery from the sink is evident in nearly all the plans, thus increasing labour, which should always be avoided. Several sets sent in are unworthy of a first year pupil, and unworthy of notice.

The lay-out of the 1st Premiated Design, No. 19, is generally well conceived, and whilst many of the roads will have steep gradients by cutting across the contour lines, the general conception is admirable. The author has treated an existing road, known as Edwards-lane, which at one point cuts through a deep rock face, in an admirable way by forming at the junction of a new cross road, an open square from which he takes a lateral road terminating at each end in a circus. Beyond the eastern circus of this road, is indicated a further green, with a suggested war memorial, and roads branch north and east to the Mansfield-road. The main entrance to the estate is where Edwards-lane joins Mansfield-road. The author takes a 30-ft. road parallel with Edwards-lane, which at the northern extremity branches east and west following the contour of the land. At the northern end of the estate runs a proposed new road 80 ft. wide. One of the difficulties of the lay-out has been the retention of the two properties known as "Woodthorpe House" and the "Cedars," and the author has shown great ability in working around these. A plot has been reserved on the south-west portion of the estate for the Educational Committee. The various dispositions of the open spaces are well conceived, although the area of these, together with the roads, will in the aggregate be out of proportion with the building sites. The houses are laid out in pairs and blocks of four. The non-parlour house with three bedrooms is generally well planned, but exception must be taken to the ground-floor bathroom, which is entered off the scullery, necessitating the scullery and living-room being a passage way from the bath-room to the staircase. The copper is badly placed on the opposite side of the scullery to the sink. The elevations are simple and reserved in design, with casement windows, brindled bricks, and red tiled roofs, but recent experience indicates that excessive cost is demanding on the part of the Government the dispensing with tiled roofs and facing bricks, which will generally affect all architectural appearance, and the final result of the author's scheme. The parlour houses are well planned, but the bath-room on the first floor is rather too far from the living-room fireplace, from which it is heated. The parlour house, with ground-floor bathroom and four bedrooms is not so successful. The scullery has five doors, and the bathroom is again placed off the scullery, with the necessary objections. The living-room window being on the narrow side of the room, which is 15 ft. 6 in. deep, is unsatisfactory. The four-bedroomed house, with an upstairs bathroom, has a through living-room. The scullery sink is inconveniently situated against the back door, and the copper at the opposite side of scullery. The general design is simple and reserved, and one can only hope that the author will be able to carry out his ideas in face of the excessive cost.

The 2nd Premiated Design is laid out on more economical lines. The main feature is a circus approached from Mansfield-road by a 60 ft. new road, from which subsidiary roads branch on to Edwards-lane, and the new road to the north of the estate. The author has conceived an ellipse around the rock-cutting already referred to in Edwards-lane, and indicates flights of steps as approaches to the open spaces formed thereby. This lay-out lacks the interesting features and artistic conceptions of the first premiated design.

In the non-parlour houses, the bathrooms and w.c.'s are well placed off the entrance, and generally this plan is admirably arranged. Elevations are straightforward, indicating pan-tile roofs which, however, would have to be raised in pitch to suit pan-tiles. The parlour houses with four bedrooms and ground-floor bathrooms are well planned, and we like them much better than the 1st premiated design, but the elevations are not so satisfactory. The author has in all cases realised that a ground-floor bath-room should be in close proximity to the staircase.

The lay-out of the 3rd Premiated Design, in its general features follows closely the 1st premiated design. The author's treatment of Edwards-lane, with the planted embankment and avenue on each side, is admirably conceived. The author provides, in addition to the school site, a site for a church, chapel, and a club. On the frontage to Mansfield-road, he indicates the provision of shops. His roads are admirably arranged to suit the contours of the land. The drawings show a very artistic and creditable handling of the scheme. We do not like the non-parlour house plans so well as those of the 2nd premiated design, and the author has failed to place his rooms in relation to the compass. The narrow end of the living-room is lighted by a 4 ft. window, and will be very dark. The coal place is entered from the scullery, which is objectionable. The bathrooms are badly placed, and the bedrooms, 6 ft. wide and others 19 ft. long, are not satisfactory. The parlour houses are not equal in plan to those of the 2nd premiated design. Like the other designs, the author has not realised the advantage of a copper against the sink. Generally, his rooms are badly lighted by narrow windows, his proportions are not satisfactory, and tend to the villa design rather than the cottage.

The author of Design No. 4 has handled the lay-out plan with ability, and has studied the contours, arranging his roads in sympathy. His house-plans are too cut up, and elevation fussy and amateurish. Design No. 7 indicates pairs only, these being well and economically planned. The designs throughout show a masterly handling, and have a decided cottage appearance. We consider that with a better lay-out plan the design would have been worthy of a place. In Design No. 9, the author submits a creditable set of plans for the houses, but we do not like his interlocking of one house with another in his parlour houses. His plans are unique in many respects, but not quite practical in working out. The elevations are illustrated by one of the most admirable sets of drawings in the room. The author of Design No. 12 has submitted a very practical, economical set of drawings; his elevations are well proportioned, and we consider that his house plans are one of the best sets submitted. The author of Design No. 13 has handled plans in a practical way, and has placed his ground-floor bathroom in a very good position. The author of Design No. 14 submits a practical set of plans, and his elevations are designed with reserve and economy. Design No. 15 shows a very creditable lay-out. The house plans are very practical, although the four-bedroomed houses are too cut up, and do not give a single good bedroom. The author of Design No. 20 has handled his lay-out plans with ability. His house plans are good and practical, whilst his elevations are very creditable. Design No. 21 is illustrated by a good set of drawings, but the planning does not equal the elevations. The author of Design No. 23 submits a very good lay-out plan, well conceived, and balanced, and it is one of the best in the room, and is executed by an able draughtsman. The plans are above the average, but the elevations lack proportion.

THE GATTIE TRANSPORT SYSTEM.

WHEN the Board of Trade inquiry into Mr. A. W. Gattie's scheme for the establishment of central clearing houses for goods was resumed last week, Captain Rottenberg said that at the proposed clearing house at Battersea, it would be possible to load sixty containers in four minutes, and four trains could be loaded every six minutes. This would give a total of 2,400 containers per hour, as compared with the present average at Nine Elms of 62 wagons per hour. Cranes would be situated at intervals along the whole length of the clearing house, and practically the whole freight on the trains could be dealt with simultaneously. Captain Rottenberg agreed to submit information regarding the smallest installation which could be put up to demonstrate the powers of the scheme. Mr. A. G. Seaman, M.I.E.E., said that no difficulty would be experienced in simultaneous loading. He exhibited a model of an escalator, which it was proposed to use for conveying the trucks from one floor to another. Professor Hele Shaw said he considered the appliances at Battersea to be a practical working section of a complete scheme, and he considered that the machinery in question would do all that was claimed for it. He saw no difficulty with regard to the construction of a London goods clearing house. He had not seen any system which seemed so likely to cope with the present congestion as that of Mr. Gattie. Colonel R. E. Crompton thought that there was no likelihood of trouble in carrying out the same system on a large scale, either at the Port of London or in a big central station in London itself. Mr. J. Swinburn, consulting engineer to the New Transport Co., thought the best method of demonstrating the possibilities of the scheme would be to install the system in a town outside London. Mr. J. Reakie, of the Eastern and Bengal Railway, thought that the Government should equip a "Gattie" city near London, with fleets of motor vehicles. There should be no railway goods traffic in London, and he believed that in the future all such traffic would be by road. Mr. C. E. Turner, who had been deputed by the Ministry of Shipping to report on the system, was of the opinion that it would solve the great problem of quay congestion.

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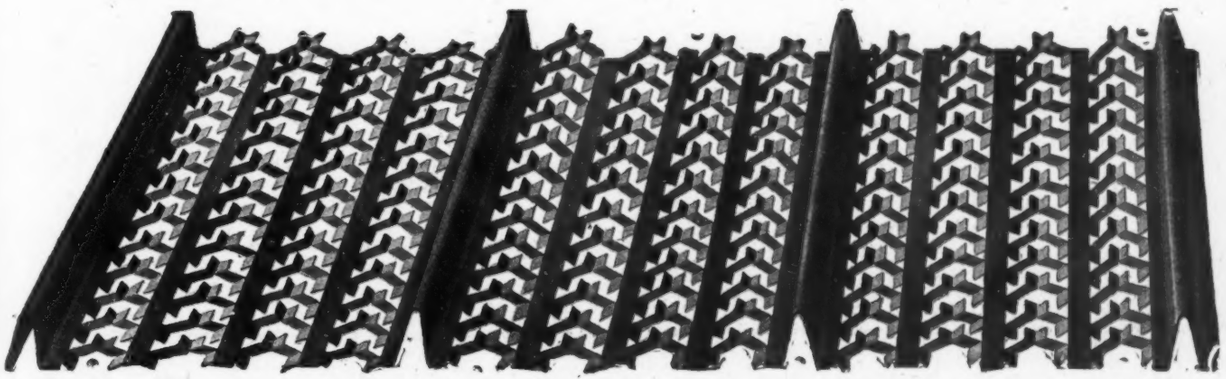

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THE TRADES UNION CONGRESS.

THE Trades Union Congress has been marked by the very high level attained by some of the speakers who have followed the example set by the President in his statesmanlike address. The main subjects of debate have, of course, been nationalisation of the mines and, arising out of that question, the methods which the trades unions are to adopt to enable their views to be put into practice. The resolution on nationalisation rejected the substituted scheme, which has only been foreshadowed by the Government, and the details of which have not yet been published, and called upon the Congress to express its resolve "to co-operate with the Miners' Federation of Great Britain to the fullest extent with a view to compelling the Government to adopt the scheme of national ownership and joint control recommended by the majority of the Commission in their Report." The resolution instructed the Parliamentary Committee to interview the Prime Minister, and then proceeded: "In the event of the Government still refusing to accept this position, a special conference shall be convened for the purpose of deciding the form of action to be taken to compel the Government to accept the Majority Report of the Commission." This resolution was carried by a large majority on the card vote, 4,478,000 against 77,000. There can be no question that the delegates to the Congress are fully entitled to express their views on the question of nationalisation, and no objection can be taken to the resolution so far as it goes, but it remains to be seen what interpretation is to be placed on the expression "compel the Government," *i.e.*, what form of compulsion is proposed. As it stands, it is an expression that might be used at any political meeting, and it is to be observed that the Congress has refrained from deciding what form its pressure on the Government is to take. In some quarters the motion passed on the first day of debate has been treated as favouring direct action, but that is a misapprehension of the resolution, which really turned on a matter relating to the action of the Parliamentary Committee. This Committee had declined to convene a special conference to consider whether direct action should be resorted to to enforce the demand of the "Triple Alliance," and the Congress decided to refer the matter back to the Committee, as it intimated that it had acted outside its powers in refusing to convene a special Conference, but the resolution did not go beyond that.

On Thursday, the question of direct action was again discussed, on Mr. Shaw's motion: "That this Congress declares against the principle of industrial action in purely political matters," but again no decision was come to, as the "previous question" was carried by a small majority. So far, therefore, this question has been left entirely at large, though doubtless it will come up again when the special conference is called, if the Government declines to take action on the Report of the majority of the Coal Commission on nationalisation of the mines. Some of the Labour leaders treat this Report as though it had framed a definite scheme for nationalisation of the mines which could be carried out by a stroke of the pen, but it must be remembered that the Commission formulated no such scheme. Six of its members expressed the opinion that nationalisation would be advantageous, six others of its members were of quite the contrary opinion, and the Chairman, whilst favouring nationalisation, said: "The question of State ownership is one of policy to be determined by Parliament, in which all classes, interests and industries are represented." Mr. Smillie intimated that the Government must be compelled to act, and he pointed to the trades union membership at that Congress, and hinted that the miners could by direct action stop all the industries in the country within a month. The Trades Union Congress, even on a card vote, represents a little over five million members, many of whom would not individually advocate any such headlong course, and even if they did so, they represent but a fifth or sixth of the voters of this country who are entitled to a voice on a "question of policy," as Mr. Justice Sankey in his report characterised this measure of nationalisation.

Nationalisation has been tried in other countries, and there are many persons who can speak of the ill results attendant upon this policy. It is a matter that requires debate and careful deliberation, and no Government can treat the finding of a commission which was hurried in its deliberations as final. One aspect of the question certainly cannot be lost sight of, and that is that if the Government of any country is made the direct employer of labour and the present liberty to strike is allowed to the employees, then direct action on the Government could be exerted in every dispute, and the general public would cease to have an equal voice in the conduct of the affairs of the country. We imagine this fact has not been lost sight of by the extremists in their advocacy of general nationalisation. The Congress seems to have realised what very serious consequences might follow were any extreme step taken at the present moment, and a general inclination to pursue constitutional methods was apparent throughout the proceedings.

A resolution that some degree of pressure on non-unionists is essential if the benefits of organised fighting are to be equally shared, comes, however, as a timely reminder that the unions do not express the unfettered opinion of all labour in the country, and that matters of principle must be carried not by force but by persuasion and the conversion of the majority of the voters to the opinions expressed by the delegates to a congress.

The President (Mr. G. H. Stewart-Bunning), in his opening address, strongly condemned "direct action" as a means of settling industrial disputes. He thought that method was the "gospel of despair," which the working people of the country, who had never lost heart in the blackest days of the war, were asked to accept in the hour of victory. He could not share the view that a national strike would cause the Government to reverse its policy, and did not understand how such a view was arrived at. The project resolved itself into a desperate gamble, with the lives of men, women and children for the stakes. He suggested that the idea of direct action was largely due to the conduct of Ministers themselves. When employers and workpeople were invited to meet together to construct a new industrial policy, it could only be understood that any agreement reached would be carried into effect; yet the Hours of Labour Bill, which was to be introduced into the House of Commons, differed largely from the unanimous agreement which had been arrived at by the employers and employees. Things like that destroyed confidence, and gave rise to the feeling that any promises would be made to tide over temporary difficulties. Referring to the question of increased output, he recognised that an increase of production was necessary, but did not agree that workpeople were slacking, although it was not wonderful that some weariness should be noticeable after five years of war. Increased output could only be obtained by the co-operation of both employers and employed, and the workers were willing to do their share. He complained of the lack of discipline so often shown in the ranks of trade unionists; he did not attempt to disguise the fact that officials and executives often made mistakes, but unofficial strikes and repudiation of agreements were the worst methods of dealing with those mistakes. Victories bought in that way destroyed the *morale* of their own leaders, and, worse still, destroyed public confidence in the integrity and honour of trades unionists. He appealed for loyalty and discipline, without which trades unionism would fritter away its strength in internal disputes.

In moving a resolution, which was carried, that a policy be drafted for the control of industry, whereby "the trade union movement can secure . . . complete emancipation from wage slavery," Mr. J. Bromley said that industry should not merely be nationalised, but controlled jointly by the workers and the State in the interests of the community. In seconding, Mr. S. P. Jarvis believed that if plans were prepared for the control of industry by the workers, they would be prepared to get rid of "ca'canny," but they were not satisfied with doing their best under present conditions.

Mr. J. T. Brownlie spoke very strongly on the necessity of increasing production, and said that many of his friends failed to appreciate the fact that wages were paid out of production, and that if any advance of real wages was to be obtained, the cost of living must be lowered by increased production. The "ca' canny" policy was a mistaken one, and, so far as he knew, was not encouraged by any trade union executive. There was a power of production in this country which could create a great abundance, but it was not properly organised or utilised.

On Thursday, a resolution calling upon the Parliamentary Committee to urge the Government to assume control of the whole of the banking of the country, was passed, and later the question of direct action came up for discussion. The resolution was, "That this Congress declares against the principle of industrial action in purely political matters," but after considerable discussion, in which the main issue was avoided by the miners' leaders and condemned by others, it was not put to the vote. Mr. Thomas did not believe that any delegate present could speak on the subject with the authority of his trade union, or that any trade union had given its delegate a mandate on the straight and simple issue of direct action.

PATENTS.

APPLICATIONS PUBLISHED.*

118,599.—International de Lavaud Manufacturing Corporation: Manufacture of cast-iron pipes.

130,735.—F. J. J. Gibbons: Metal window frames and sashes of the sliding sash type.

130,758.—E. C. MacCormac and J. W. Grundy: Concrete slabs, and buildings formed therefrom.

130,781.—H. Banger: Roofs of buildings.

130,837.—Crittall Manufacturing Co., and W. F. Crittall: Method of applying hinges to casement windows.

130,843.—E. Mellor: Method of securing knobs or handles to the spindles of locks and latches.

130,848.—J. A. F. Hall: Reinforced hollow concrete blocks.

130,892.—A. Neilson and A. Neilson: Windows.

130,897.—H. V. Kent: Construction of hollow walls for buildings.

130,920.—D. J. Davis: Locks and the like fastening apparatus.

130,922.—T. Robson: Pivoted joints.

131,095.—T. Hodson: Kilns for the incineration of earth matters and dolomites, limes, and cements.

131,107.—J. N. Russell and Rosser & Russell: Heating and ventilating apparatus.

120,375.—J. Good: Heating apparatus.

131,164.—Sir G. K. Scott-Moncrieff and J. Hines: Cement.

131,173.—J. Farley: Fireplaces.

131,178.—C. M. J. Roch and L. G. Mouchel & Partners: Reinforced concrete floors and roofs.

131,216.—Crittall Manufacturing Co. and W. F. Crittall: Window sashes and the joints of the bars of the same.

131,218.—J. Whitehead: Window sashes and window frames.

131,221.—C. W. Crofts: Chimney cowls and ventilators.

131,225.—S. Moyse: Beams and roofs.

*All these Applications are now in the stage in which opposition to the grant of Patents upon them may be made.

HOUSING AND TOWN-PLANNING NOTES.

Loans for Housing.

The Commissioners of the Treasury have announced that the rates of interest to be charged on loans for housing purposes from the Local Loans Fund, as from September 1 last, are to be as follows:—

Loans in respect of schemes not receiving subsidy under the Housing Acts: (a) To companies and private persons limiting their profits to 6 per cent. per annum (subject to income-tax)—not exceeding 30 years, 5½ per cent., not exceeding 40 years, 5½ per cent.; (b) to companies and private persons not so limiting their profits—not exceeding 30 years, 6 per cent., not exceeding 40 years, 6¼ per cent.

Loans in respect of schemes receiving subsidy under the Housing Acts: Loans to local authorities secured on local rates—any period, 5½ per cent.; loans to public utility societies limiting their profits to 6 per cent. per annum, as defined by the Housing Acts, 1919 (subject to income-tax)—not exceeding 30 years, 5½ per cent., not exceeding 50 years, 5¾ per cent.

As a temporary measure until a permanent rate can be fixed, there is to be included in the mortgage in respect of any such loans (whether to local authorities or public utility societies) a condition that the above rates are provisional only, and may be revised when permanent rates can be fixed, such revised rate to run from the commencement of the loan.

The Cost of Building.

Speaking at Brighton, last week, Sir Kingsley Wood, M.P., said that the State would not become "jerry-builders," but the Ministry of Health was determined to save as much as possible, and if necessary to attack any "ring" which might be taking advantage of the housing shortage to keep up prices. Drastic action had been taken in connection with the cost of building materials, and by the modification of tenders a sum of £200,000 had been saved recently on 3,200 houses, or an average of £70 per house. More would have to be done in this direction, and a prodigal policy on the part of local authorities could not be tolerated.

South Yorkshire.

The Bullcroft Colliery Co. is spending between £25,000 and £30,000 in the erection of 52 houses to alleviate the shortage in the colliery village of Carcroft. The houses are being built in three blocks of four each, and are costing over £500 per house. The houses have, on the ground floor: front room (18 ft. × 14 ft.), kitchen (11 ft. × 11 ft. 6 in.), bath-room, larder, coal-house, copper and other conveniences; there are three rooms upstairs. All the rooms will be 9 ft. high, and each house will have a frontage of 22 ft. and a depth of over 37 ft. The houses will be of brick, with stucco or pebble dash, and each will have a large garden. Sir Tudor Walters has drawn the plans, and the houses are being erected by Messrs. H. Booth & Sons, Ltd., of Sheffield.

In connection with the new Markham Main Colliery, at Doncaster, which is about to be sunk on the fringe of the town, a start has been made with the first batch of 50 houses out of 1,000 which are to be erected to form a model village for the colliery workers. These houses are to be built by the Housing and Town Planning Trust. The plan of the new village is largely semi-circular, and provision is made for a railway station, schools, village green, institute and playing fields. It is proposed that the main thoroughfare through the village shall be at least 60 ft. wide, with a building line on each side of 20 ft. The houses are to be lighted with electricity, will be of brick, with pebble dash from the first floor upwards, built in blocks of six or four, and will be in many respects similar to those now being erected at Carcroft.

WEEKLY HOUSING RETURN.

The weekly return of housing progress issued by the Ministry of Health states that the number of new schemes submitted to the Ministry during the week ended September 6 was 145, bringing the total to 4,685, comprising about 44,500 acres. The total number of schemes approved is 1,493, comprising about 18,700 acres. Some large house-plan schemes from the Midlands were received during the week, and approval has been given to the house-plans submitted by Leek (210 houses), Tipton (190), Quarry Bank (64), and Wolverhampton (24). House-plan schemes from other parts of the country include large schemes from Sunderland (199) and Little Lever (115).

The Ministry, before sanctioning the purchase of a housing site by a local authority, requires the authority to consult the district valuer of the Land Valuation Department as to the value of the site. If desired by the local authorities, the district valuers undertake negotiations with the owners of sites. A statement has been prepared showing the results of the 516 cases in which such negotiations had been successfully completed up to the end of August. The total of the sums provisionally agreed upon by the local authorities or asked for these sites was £946,338, the valuation set upon the sites by the Government valuers was £667,972, and the total finally agreed to be paid was £716,870.

Applications in considerable numbers are being received from local authorities for war service huts suitable for adaptation into dwellings for the working classes. In the case of one town, where people are in occupation of adapted huts, the increasing demand has led the local authority to apply for a further supply. The Ministry has arranged for huts to be immediately available in a number of cases, and is in negotiation with the War Office with the object of arranging for more huts to be made readily available for acquisition by the local authorities.

As regards the conversion of houses into flats, it is found that about 4,000 houses are considered by the Metropolitan Borough Councils to be suitable for conversion. As expected, the outer suburbs of London do not provide many cases of unoccupied houses considered suitable. The returns received from twenty of the larger local authorities, excluding the authorities within the London County Council area, show that the total number of unoccupied houses which are considered by the local authorities to be suitable for conversion into flats is 382. The number of rooms in the 382 houses is 4,228. Inspection of these houses is being made by the London Housing Board.

Building Sites.

Details of local authorities' schemes dealt with during the week are as follows:—

Schemes Submitted.—The number submitted, by 55 local authorities, was 144, bringing the total to 4,619, covering approximately 41,500 acres. The new schemes were as follows:—

URBAN.	ACRES.
Gelligaer (7 sites)	134·47
Newhaven	44·50
Southend-on-Sea	34·00
Street	13·88
Bournemouth	13·80

Banbury, 1.9; Cowbridge, 2.87; Dolgelly, 2.68; Failsworth, 4.16; Finedon, 8; Hampstead (3), 2.18; Hampstead (1), —; Hexham, 2.21; Hollingworth, .75; Keswick, 7.37; Kingsbridge, 3.35; Leicester, 2.01; Mossley, 6; Nailsworth, 2.61; Rickmansworth, 5.43; Sandbach, 3; South Molton, 8.50; Tavistock, 4.66; Usk (1); Wantage, 5; Woolwich, 6.

RURAL.	ACRES.
Bumpstead (8 sites)	17·76
St. Austell (6)	15·83
Buntingford (5)	13·63
Hexham (8)	12·75
Dore (12)	11·56
Bosmore and Claydon (6)	10·99
Farnham (6)	10·74
Lexden and Winstree (9)	10·25
Depwade (2)	10·23

Bath (2), 1.50; Blackwell (2), 3; Cerne (2), 1.50; Cirencester (2), 2.50; Congleton (3), 3.25; Cricklade and Wootton Bassett, 2; Darlington, 2; Edeyrnion, 3.72; Howden, .91; Marshland, 4; Petworth (2), 2.50; Pontefract (8), 6. 74; Ramsbury, 5.30; Ringwood, 7.72; Ruthin (8), 2.58; Tewkesbury, 4; Tisbury, 1; Walsingham, 3.29; Wincanton, (7), 8.35; Wing, 2.55.

COUNTY COUNCIL.—Essex, .33.

Schemes Approved.—Seventy schemes were approved, comprising an area of 443 acres. This brings the total to 1,462, covering approximately 18,500 acres. The schemes newly approved were as follows:—

URBAN.	ACRES.
Swansea	111·00
Litherland	36·13
Kearsley	24·69
Bolton	23·16
Stretford	21·18
Woking	19·59
Kendal	19·02
Houghton-le-Spring	18·00
Whitley and Monkseaton	17·36
Heanor	12·14
Sandwich	10·33

Chesham, 4.47; Gt. Berkhampstead, 4.50; Nantwich, 4.75; Old Fletton, 3.62; Swinton and Pendlebury, 6.97; Ware, 6; Worsborough, 5; Worthing, 7.03.

RURAL.	ACRES.
Upton-on-Severn (8 sites)	14·82

Banbury, (2), 2; Bromsgrove, 6.57; Cannock, 6.61; Cirencester (3), 2.50; Depwade (5), 6; East Retford (2), 1.73; Eton, 6.93; Faringdon (4), 4.04; Mitford and Launditch, 1.66; Newbury, 1; Newport Pagnell (2), 7.72; Saffron Walden, 1.50; St. Albans (2), 3; Stanstead (2), 2.09; Steyning West (3), 3.80; Tisbury (5), 3.47; Uckfield (2), 2.50; Wantage, 1.33; Wincanton, 1; Winslow, 7.92.

COUNTY COUNCIL.—Isle of Ely (2), 85.

Lay-Outs.

Schemes Submitted.—Fifty-three schemes were submitted by 35 local authorities, bringing the total to 814. The new lay-out schemes were as follows:—

URBAN.—Ampthill, Banbury, Buckingham, Desborough, Drighlington, Finchley, Godmanchester (4 sites), Gt. Berkhampstead, Higham Ferrers, Keswick, Kingston-on-Hull, Orrell, Quarry Bank, Shepshed (2), Stretford, Swinton and Pendlebury (2), Tipton (8), Torquay, Wath-on-Dearne, Weetslade (2), Wolverhampton, Wrexham.

RURAL.—Chipping Norton (3), Epping, Epsom, Kettering, Lydney, Newbury, Newport Pagnell (3), Northwich, Pontefract, Pontypool, South Stoneham (2), Wallingford, Wincanton.

Schemes Approved.—The following 46 schemes, promoted by 37 local authorities, were approved, bringing the total to 415:—

URBAN.—Ampthill, Ashton-in-Makerfield, Blyth, Chester-le-Street, Drighlington, Felling, Finchley, Greasborough, Hereford, Hindley, Horbury, Kingston-on-Hull, Liverpool, Maidenhead, Normanton, Nottingham, Ossett, Quarry Bank, Salisbury, Stretford, Sunderland, Tipton (8 schemes), West Hartlepool, Whittington and Newbold, Wolverhampton.

RURAL.—Chester-le-Street, Durham, Easington (2 schemes), Houghton-le-Spring, Lanchester, Macclesfield, Newbury, Thame, Walsingham, Wincanton, Wing.

COUNTY COUNCIL.—Isle of Ely (2 schemes).

House Plans.

Schemes Submitted.—Forty-seven schemes, representing 1,347 houses, were submitted by 26 local authorities. This brings the total to 499, representing 27,529 houses. The districts and number of houses are as follows:—

URBAN.—Ampthill, 8; Drighlington, 24; Falmouth, 44; Higham Ferrers, 20; Leek,

210; Little Lever, 115; Orrell, 78; Quarry Bank, 68; Stretford, 37; Sunderland, 199; Tipton (8 schemes), 190; Wolverhampton C.B., 24.

RURAL.—Chester-le-Street, 47; Chipping Norton (3), 32; Epping, 16; Epsom, 10; Huntingdon (8), 46; Kettering, 6; Newbury, 6; Newport Pagnell (3), 33; Northwich, 10; Pontefract, 80; Pontypool, 6; Ruthin, 2; Westbourne, 4; Wincanton (4), 36.

Schemes Approved.—Twenty-seven schemes, promoted by 20 local authorities, were approved during the week, bringing the total to 301, representing 18,260 houses. The districts and number of houses are as follows:—

URBAN.—Ampthill, 8; Ashton-in-Makerfield, 80; Drighlington, 24; Hereford, 44; Leek, 210; Little Lever, 115; Normanton, 138; Quarry Bank, 64; Stretford, 37; Sunderland, 199; Tipton (8 schemes), 190; Whittington and Newbold, 28; Wolverhampton, 24; Wrotham, 30.

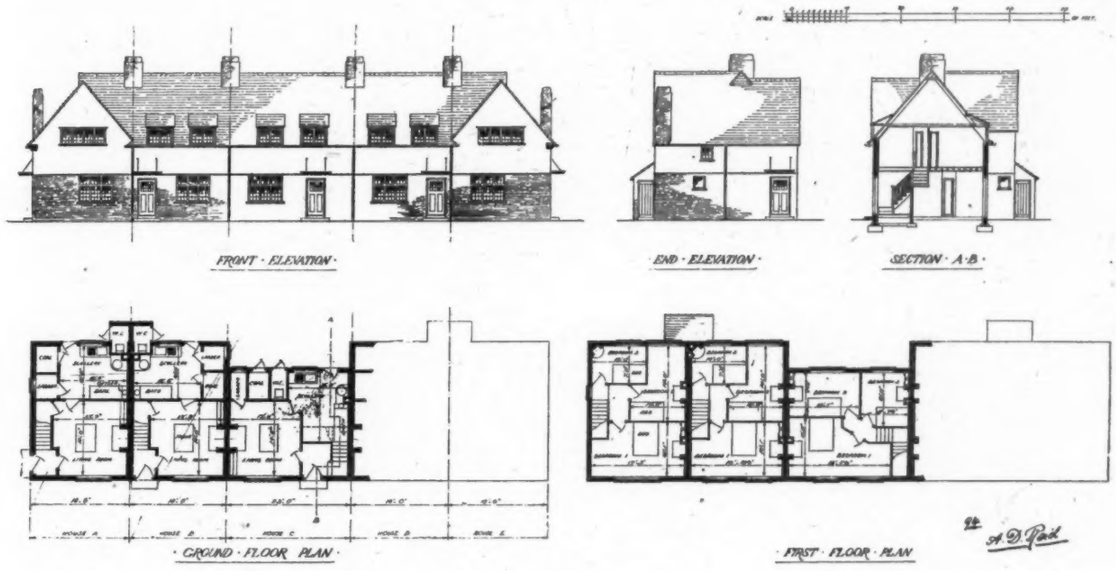
RURAL.—Chester-le-Street, 47; Crowmarsh, 30; Lanchester, 8; Newbury, 6; Walsingham, 4; Wing, 8.

Harefield.

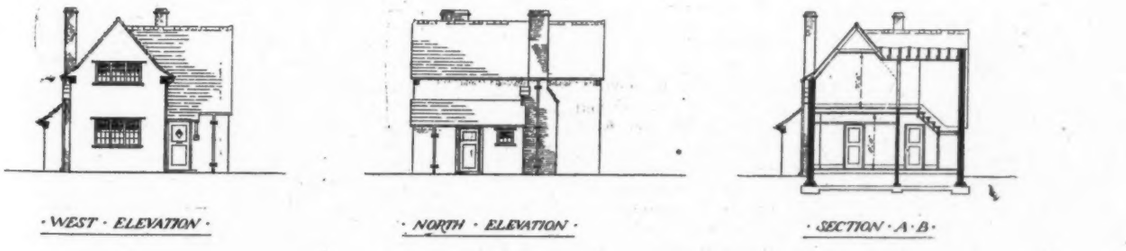
It is reported that two cottages, for Bell's United Asbestos Co., have been completed within three days of a month, and it is expected that the erection of the next two will occupy three weeks. The cottages have four bedrooms, sitting-room, kitchen and scullery; a bath-room is partitioned off from the scullery and hot-water apparatus is provided. The construction is of concrete bricks with asbestos sheeting as a facing. Cork lino. is cemented to the flooring. A further fifty houses are to be provided on the estate.

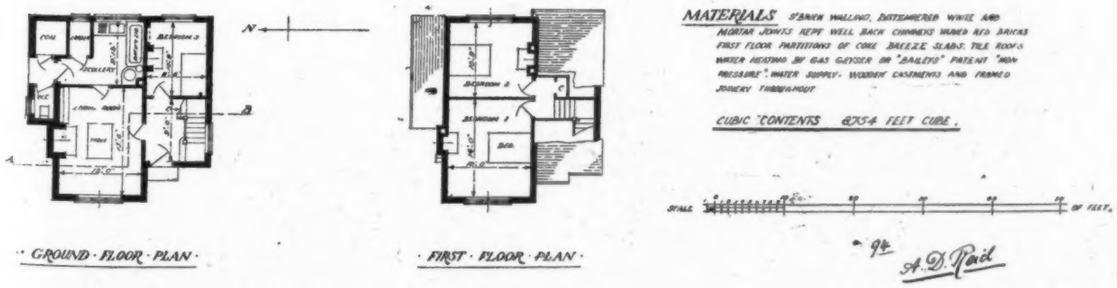
Cottage Designs.

The two cottage designs illustrated on this page were submitted in a recent competition. The materials proposed were as follows. *Design No.* 1.—All external walls of 7 in. brickwork, partitions on first floor to be of coke breeze slabs; wooden casements and simple-framed joinery throughout. Externally, the chimneys and the walls up to first floor level are faced with varied red bricks; above first-floor level, the walls are rough cast white. *Design No.* 2.—This is a variation of Design No. 1. The construction is generally similar to that already described above; but, externally, the walls, except for the chimneys, are of best stocks distempered white, the mortar joints being kept well back; the chimneys to be of varied coloured red bricks. The roofs in both cases are tiled; and the water-heating by gas geyser over the bath on a patent non-pressure water supply system. The designs are by Mr. Allan D. Reid, of 27, Belford-grove, Woolwich, S.E. 18.



DESIGN NO. 1.





DESIGN NO. 2.

Cottage Designs. By MR. ALLAN D. REID.

THE BUILDING TRADE.

NORTHERN COUNTIES FEDERATION OF BUILDING TRADES EMPLOYERS.

AT the last quarterly meeting of the Board of Representatives of the Federation, Mr. S. Miller (Newcastle) in the chair, it was reported that proofs of the new Working Rules for the North-East Coast and Darlington had been sent to members of the Board and to the local secretaries of the Federation, and that a number had also been supplied to the operatives' secretaries for distribution to their branches. There were, however, two matters which were still under discusson, viz., the Walking Time Rule and Wet Time Rule. With respect to the Walking Time Rule, it was a recommendation from the Conference of Employers and Operatives of the North-East Coast and Darlington that local associations in that area should come to an agreement locally with the operatives. They should consider whether they would take the employers' works as a centre, or whether they would fix a centre or a boundary line for all employers.

A report on the negotiations with the North-East Coast Engineering Trades Employers' Association was presented. In the engineering trade on Teeside, bricklayers received prior to the last advance in the building trade a higher rate of pay and worked longer hours than bricklayers employed in the building trade, and a mutual understanding with respect to concerted action in dealing with the wage question was desirable.

A deputation had met representatives of the Engineering Employers' Association on the general question of co-operation in the case of strikes or lockouts and the question of a Confederation of Employers' Organisations in this district, and the Engineering Trades Employers' Association had sent a draft form of agreement for a reciprocal understanding in case of a strike or lockout. The question of further fluctuation of the bricklayers' wage was still under the consideration of the Engineering Trades Employers' Association. It was resolved that the agreement be entered into by the Federation on the understanding that the agreement endured for the mutual benefit of all parties to the scheme.

A short *resumé* of the conference with subtraders, timber merchants, &c., and the Northern Architectural Association was presented, and a Committee, on which the Federation would be represented, was about to be set up.

Forty-four Hour Week.—The application of the National Federation of Building Trade Operatives for a national working week of 44 hours all the year round, without reduction of wages, based on the present rate of wages of a 50-hour week, was reported upon. The operatives' ballot, by a large majority, was in favour. The National Federation declined to accede to the men's demands and the operatives asked that the matter should be taken to the National Conciliation Board. This had been done, with the result that, after failing to arrive at a settlement, the consideration of the question was adjourned until September 23 to enable the employers to take a ballot on the demands of the operatives. Mr. Fairnington represented the Northern Counties Federation, and reported upon the action of the National Conciliation Board. He made it quite clear to his colleagues that no subsequent action should be taken that would interfere with the good relations of the employers and employees in the North, and this the employers assured him was understood. The ballot paper asked for "Yes" or "No" on the question (1) of 44 hours and (2) of leaving the matter in the hands of the National Executive to take all action necessary. Ballot papers had been sent direct from the National Federation to all the local associations.

Housing Schemes.—It was reported that the Prudhoe housing scheme was a public invitation to tender, and that according to rule members must refrain from tendering against non-members. All who wished to tender, however, were asked to send sealed tenders to the secretary of the Newcastle Association, who handed the same to the architects after he had interviewed them and had been assured that any tenders of non-federated members would be returned. As long as members would advise the secretary when about to tender, the secretary could get into touch with the architects, and there was no difficulty with the architects, who were ready to give the assurance asked for; but the matter required the constant attention of the members to the rule for advising their local secretary, on whose prompt action the maintenance of the rule depended.

Tenders were being invited for the Consett housing scheme, and all tenders were to be accompanied by priced schedules and priced out quantities. This was in violation of the regulation to which the R.I.B.A. was a party, and members had been requested to comply with the rule by withholding tenders until an assurance was given that tenders would be accepted without that condition, and, further, that no non-federated builders were tendering. A form of contract was put forward by the local authority, but members were instructed to insist on the form agreed by the Housing Commission and the National Federation of Building Trade Employers.

The invitation to tender for the Crook housing scheme was not limited to members, and notices had been sent to members of each Association asking them to refrain from tendering until further instructions had been received as to the method of procedure.

The Seation Delaval housing scheme was a scheme in which no quantities were furnished. In view of the resolution against tendering without quantities and the further rule against tendering with non-federated employers, instructions had been sent out asking the members to refrain from pricing out this work until proper quantities had been prepared, and then to communicate with the secretary so that it might be ascertained that only federated employers' tenders were being entertained.

Tenders were being invited for the Sunderland housing scheme, and the material had to be purchased from the local authority. This meant contracting for labour only, which was against the Working Rules. A letter had been sent to this effect to the Corporation, with the result that a communication had been received from the Housing Commissioner at Newcastle that the contractor was now at liberty to provide his own material, and that the request to forward priced bills of quantities and schedules with tender was waived.

The Engineer-in-Chief of the General Post Office was in negotiation with one of the members who had tendered for the Gateshead (Durham-road) Underground Contract, on the conditions set out on the slip attached to tenders, and exception was taken to his tender on the ground that the Post Office officials could not entertain the Federation's conditions. The members of the Federation were asked to refuse to negotiate if approached by the Post Office pending the settlement of the matter.

Training of Disabled Soldiers.—A scheme proposed by the Ministry of Labour for the employment of disabled men in the building trade was submitted. The secretary read extracts from the copy of minutes sent, and it was agreed that a copy of these minutes should be sent to each of the local associations for consideration.

Purchase of Timber.—It was reported that representatives from the Tyne and District Saw Mill Owners' Association had been interviewed. They desired a working arrangement, whereby the members of the Federation should agree only to buy their timber from members of the Tyne District Saw Mill Owners' Association, and that their members were not to supply non-federated builders. It was agreed to approve of the principle of reciprocity and to leave the matter in the hands of the Executive Committee to work out details and effect an agreement.

Purchase of Bricks.—It was reported that Mr. Miller and the Secretary had had an interview with representatives of the Brick Manufacturers' Association. It was suggested that a scheme should be formulated between the two Associations, the brickmakers to undertake not to sell to non-federated builders, and for federated builders to buy only from members of the Brick Manufacturers' Association. The question was raised of colliery owners who made bricks. It was stated that practically all brick manufacturers were in the Association, and that they made 80 to 90 per cent. of the bricks sold. It was agreed to approve of the scheme in the same way as the Saw Mill Owners' agreement.

THE PROFITEERING ACT AND BUILDING MATERIALS.

The first order definitely applying the provisions of the Profiteering Act came into force last week. Among the articles specified are all articles of furniture and all building materials, including:—Bricks; building stone; slates and tiles; cement; lime; sand and ballast; timber and joinery; glass; sanitary ware; hardware and ironmongery; light castings; milled lead and pipes; red and white lead; putty and whiting; zinc, copper, tin, and alloys; paints and varnishes; turpentine and distemper; wallpapers; stoneware and agricultural pipes; cast, wrought iron, and steel pipes; valves and fittings; electric cable fittings, plant, and meters; road materials (stone setts, wood blocks, asphalte, tar, and rope and stone); structural steel and ironwork; rolled joists; channels and angles, tees; bars and plates; plant, tools and tackle required for the construction of buildings and public works.

The articles specifically mentioned in this schedule are given as examples of the class of articles to which the order applies, and any other article within the class is within the order.

WELFARE IN INDUSTRY

A pamphlet has been issued by the Home Office (London: His Majesty's Stationery Office. Price 2d. net.) on welfare and welfare supervision in factories and workshops, with the object of indicating to employers the principles on which welfare work should be based, and to promote the consideration of the subject by employers generally. The subject is dealt with from the points of view of general health, prevention of fatigue, the adoption of safety devices for the prevention of accidents, mess-rooms, &c. Attention is drawn to the importance of the careful selection of workers for the work they have to do, and the necessity for supervision and observation after their appointment. It is recommended that records be kept of time lost through sickness, &c., as it has been found that this is often caused by the unsuitability of the workman for the work on which he is employed.

NOTES FROM THE FOREIGN PRESS.

These notes are taken from the Technical Supplement to the *Review of the Foreign Press*, formerly issued by the General Staff, War Office.

RECONSTRUCTION OF RURAL DWELLINGS IN THE DEVASTATED REGIONS.

M. Bonsquet discusses the types of dwelling to be constructed to replace those destroyed in France and Belgium during the war. Labour is expected to be very scarce for a long time and material very expensive, so that the cheapest and most easily built types of houses are those that must be considered in this connection. The concrete walled type is probably very advantageous. The agglomerate can be increased in richness, and so the waterproofness of the walls more or less guaranteed. As it forms a monolith, it uniformly distributes the pressure, and withstands slip just like a single block. The materials of construction are cheap and easily obtainable, all waste material from demolished structures being suitable, provided they are not porous. The plank panel system, which is used to some extent in England, is a convenient method to adopt.

Clinker Concrete.—This is a possible and cheap material. Mixed with hydraulic lime at the rate of 200 kg. per cbm. of clinker, or with bastard mortar (lime and cement), or even with plaster, it gives a solid concrete, which is light, healthy, and non-rotting. The clinker should be freed from all foreign matter.

Hollow Cement Blocks.—Considerable improvements have been made in the manufacture of this material. Simple moulding presses are available, and the lime formerly used as a binder has been replaced by cement, as it is more easily moulded. These blocks are very economical, are easily laid, and are perfect heat and cold insulators. The thermal conductivity of air enclosed in the hollows (sometimes double, and often triple) has a co-efficient of only 4 per cent., as compared with 70 per cent. for solid-brick walls and 200 per cent. for ordinary masonry, so that dwelling-houses so built are protected from temperature variations. Thus, considerable economy in heating can be effected. No great pressure is required in the manufacture of these blocks in the press. Illustrations are given showing the arrangement of blocks of the Lean and "Gep" types.

Clinker agglomerates are also likely to be employed. These are pressed on the scene of operations. The binder used in this case is ordinary plaster. These agglomerates are suggested specially for party walls and inside walls.

Compressed Clay Pisé.—Pisé is a slightly damp clayey earth which is stamped in panels, like the concrete already mentioned. It is largely used for out-buildings. M. Laval, of Lyons, suggested its use for dwelling-houses before the war; it was generally used in the form of solid blocks compressed in a moulding press and then laid on lime mortar. This system was found to save labour, and the blocks were stronger and more homogeneous, while the surfaces and edges were very regular. The writer believes that this system will enable houses to be constructed at a reasonable cost, which will not require much upkeep, and are impervious to atmospheric influences. By replacing the water used in making the pisé by milk of lime, the consistency and strength of the pisé can be increased. Coiquet suggests the following mixture for the pisé:—Crude argilaceous earth, 27 parts; sand and gravel, 64 parts; watered lime, 9 parts.

Reinforced Concrete.—The writer mentions three systems, the Delille, Bonna, and Fildier, exhibited at the "Cité Reconstruite" Exhibition of 1916. In the Bonna system, the structure rested on supports or horizontal beams, which acted as a foundation. These "ground-sills" had posts connected at the top by tall wall-plates serving as supports for the roof-timbers. The roof was slightly sloped, each roof-timber forming a reinforced girder similar to a lattice-work girder. Reinforced concrete purlins connected these roof-timbers. The walls were double. The other two types were somewhat similar.—*La Nature*, July 12, 1919.

RATES OF WAGES IN THE BUILDING TRADE.

THE following are the present rates of wages in the Building Trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur :—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters	Masons' Labourers.	Bricklayers' Labourers	Plasterers' Labourers.
Aberdare	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/4½	1/4½	1/4½
Accrington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½		1/3½–1/3½	
Altrincham	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½		1/4½–1/4½	
Ashton-under-Lyne	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½		1/4½–1/4½	
Barnsley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/4½	1/4½	1/4½
Barrow-in-Furness	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½		1/4½–1/4½	
Barry	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/4½	1/4½	1/4½
Bath	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½		1/4½–1/4½	
Bedford	1/1	1/2	1/2	1/1	1/1	1/1	10	10	10	10
Birkenhead	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½		1/4½–1/4½	
Birmingham	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Bishop Auckland	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/5½	1/5½	1/5½
Blackburn	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½		1/3½–1/3½	
Blackpool	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½		1/4½–1/4½	
Bolton	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½		1/3½–1/3½	
Bournemouth	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/1½	1/1½	1/1½
Bradford	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/2½	1/2½	1/2½
Bridgwater	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/2½	1/2½	1/2½
Brighton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½
Bristol	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½		1/3½–1/3½	
Burnley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/4½	1/4½	1/4½
Burton-on-Trent	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½		1/4½–1/4½	
Bury	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1½	1½	1½
Cambridge	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/1	1/4½	1/4½	1/4½
Cardiff	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/3½	1/3½	1/3½
Chatham	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/3½	1/3½	1/3½
Chelmsford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/3½	1/1½	1/1½	1/1½
Cheltenham	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/4½	1/4½	1/4½
Chester	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½		1/3½–1/3½	
Chesterfield	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/5½	1/5½	1/5½
Colchester	11	11½	11½	1/-	11	1/-	9½	8½	8½	8½
Coventry	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/5½	1/5½	1/5½
Crewe	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½		1/2½–1/2½	
Darlington	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/5½	1/5½	1/5½
Derby	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/5½	1/5½	1/5½
Doncaster	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/4½	1/4½	1/4½
Dudley	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/3½	1/3½	1/3½
Durham	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/5½	1/5½	1/5½
East Glam. and Mon. Valleys	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/4½	1/4½	1/4½
Exeter	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/1	1/1	1/1
Folkestone	1/3½	1/3½	1/3½	1/3½	1/2½	1/3½	1/2½	1/-½	1/-½	1/-½
Gloucester	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/3½	1/3½	1/3½
Grantham	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/3½	1/3½	1/3½
Grays	1/7½	1/7½	1/7½	1/7½	1/7½	1/8½	1/6½	1/5½	1/3½	1/3½
Grimsby	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/5½	1/3½	1/3½
Great Yarmouth	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/1½	11½	11½	11½
Guildford	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/2½	1/-½	1/-½	1/-½
Halifax	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/5½	1/5½	1/5½
Harrogate	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/4½	1/4½	1/4½
Hartlepools	1/9½	1/9½	1/9½	2/9½	1/9½	1/9½	1/9½	1/6½	1/5½	1/5½
Hastings	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/2½	1/2½	1/2½
Hereford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/-½	1/-½	1/-½
Huddersfield	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/3½	1/3½	1/3½
Hull	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/5½	1/5½	1/5½
Ipswich	1/3½	1/3½	1/3½	1/4½	1/4½	1/4½	1/4½	1/1½	1/1½	1/1½
Lancaster	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/4½	1/4½	1/4½
Leamington Spa	11½	1/1½	1/1½	11½	11½	1/1½	1/1½	10½	10½	10½
Leeds	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/5½	1/5½	1/5½
Leicester	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/2	1/1½	1/2
Lincoln	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3	10½	10½
Liverpool	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/4½–1/4½		
Llanelly	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/4½	1/4½	1/4½
London	1/9½	1/9½	1/9½	1/9½				1/5½	1/5½	1/5½
Loughborough	2/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/5½	1/5½	1/5½
Luton	1/6½‡	1/6½‡	1/6½‡	1/6½‡	1/6½‡	1/6½‡	1/5½‡	1/3½‡	1/3½‡	1/3½‡
Maidstone	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/3½	1/3½	1/3½
Manchester	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½		1/4½–1/4½	
Mansfield	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/0½	1/1
Merthyr Tydfil	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/4½	1/4½
Middlesbrough	1/9½‡	1/9½‡	1/9½‡	1/9½‡	1/9½‡	1/9½‡	1/9½‡	1/9½‡	1/5½‡	1/5½‡
Newcastle-on-Tyne	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/5½	1/5½	1/5½
Newport, Mon.	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/4½	1/4½	1/4½
Northampton	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/0½	1/0½	1/0½
Norwich	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/0½	1/0½	1/0½
Nottingham	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/5½	1/5½	1/6½
Oldham	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½		1/4½–1/4½	
Oxford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/2½	1/2½	1/2½
Plymouth	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/5½	1/5½	1/5½
Pontypridd	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/4½	1/4½	1/4½
Portsmouth	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/3½	1/3½	1/3½
Preston	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/4½	1/4½	1/4½
Reading	1/7½	1/7½	1/7½	1/6½‡	1/7½	1/7½	1/6½	1/4½‡	1/3½‡	1/3½‡
Rochdale	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/5½	1/5½	1/5½
Rochester	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/3½	1/3½	1/3½
Rugby	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/4½	1/4½	1/4½
St. Albans	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/4½	1/4½	1/4½
St. Helen's	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/5½	1/5½	1/5½
Scarborough	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/4½	1/4½	1/4½
Sheffield	1/8½‡	1/8½‡	1/8½‡	1/8½‡	1/8½‡	1/8½‡	1/8½‡	1/5½‡	1/5½‡	1/5½‡
Shrewsbury	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/4½	1/4½	1/4½
Southampton	1/4½	1/4½	1/4½	1/4½	1/4½	2/4½	1/3½	1/1½	1/1½	1/1½
Southend-on-Sea	10	10	10	10	P'cework	10	6	8	8	8
Southport	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½		1/3½–1/3½	
South Shields	1/9½‡	1/9½‡	1/9½‡	1/9½‡	1/9½‡	1/9½‡	1/9½‡	1/5½‡	1/5½‡	1/5½‡
Stockport	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½		1/4½–1/4½	
Stockton-on-Tees	1/9½‡	1/9½‡	1/9½‡	1/9½‡	1/9½‡	1/9½‡	1/9½‡	1/5½‡	1/5½‡	1/5½‡
Stoke-on-Trent	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/3½‡	1/3½‡	1/3½‡
Stroud	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/3½‡	1/2½	1/2½	1/2½
Sunderland	1/9½‡	1/9½‡	1/9½‡	1/9½‡	1/9½‡	1/9½‡	1/9½‡	1/5½‡	1/5½‡	1/5½‡
Swansea	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/4½	1/4½	1/4½
Taunton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/2½	1/2½	1/2½
Torquay	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/1½	1/1½	1/1½
Wakefield	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/5½	1/5½	1/5½
Walsall	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/4½	1/4½	1/4½
Warrington	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/5½	1/5½	1/5½
West Bromwich	1/7½‡	1/7½‡	1/7½‡	1/4	1/3½	1/7½‡	1/5½‡	1/4½	1/4½	1/5½
Wigan	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/4½–1/4½		
Windsor	1/4	1/4	1/4	1/4	1/4	1/4	1/2½	1/0½	1/0½	1/0½
Wolverhampton	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/5½	1/4½	1/4½	1/4½
Worcester	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/2½	1/1½	1/1½	1/1½
York	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/4½	1/4½	1/4½

The Masons' rate given is for bankers: fixers usually ½d. per hour extra. * War bonus of 2s. per week granted. † War bonus of 3s. per week granted. ‡ War bonus of 3s. 6d. per week granted. ‡‡ War bonus of 5s. per week granted. ¶ War bonus of 7s. 6d. per week granted. § These rates include the 12½ per cent. bonus. [The above rates, unless otherwise shown, are exclusive of 12½ per cent. bonus.—ED.]

COMPETITIONS, CONTRACTS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk (✱) are advertised in this number. Contracts iv; Competitions iv; Public Appointments liv; Sales by Auction lviii. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

BUILDING AND PAINTING.

✱SEPTEMBER 19.—**Wrotham (Kent).**—The Wrotham U.D.C. invite tenders for the erection of 30 cottages at Borough Green, Kent.

✱SEPTEMBER 20.—**Witney.**—The Witney Urban District Council invite tenders for the erection of fourteen working-class houses at Witney.

SEPTEMBER 22.—**Abertridwr, &c.**—GARAGE AND PAINTING.—The Senghenydd and Aber Valley Co-operative Society, Ltd., invite tenders for the erection of a garage at Abertridwr, and for external painting, &c., to Co-operative Society's buildings at Senghenydd and Abertridwr. Specification of Mr. John H. Phillips, architect, 7, Pembroke-terrace, Cardiff.

SEPTEMBER 22.—**West Bromwich.**—HOSPITAL EXTENSION.—The Corporation invite tenders for the erection of an additional ward at their Infectious Diseases Hospital. Quantities of Mr. A. D. Greatorex, borough engineer, Town Hall, West Bromwich.

SEPTEMBER 22.—**Leeds.**—PAINTING.—The Corporation invite tenders for painting the Wholesale Meat Market and the Corn Exchange. Specifications of Mr. W. T. Lancashire, City Engineer, Municipal Buildings, Leeds.

SEPTEMBER 22–OCTOBER 7.—**Leicester.**—HOUSING.—The Estates, &c., Committee of Leicester invite tenders for the erection of the first portion of the Coleman-road housing scheme, consisting of 120 houses, viz.: Block 1—40 houses. Mr. Arthur J. Wood, A.R.I.B.A., Architect, Leicester. Block 2—40 houses. Messrs. Pick, Everard & Keay, Architects, Leicester. Block 3—40 houses. Messrs. Stockdale, Harrison & Sons, Architects, Leicester. Applications for quantities on or before September 22, to Mr. E. C. Mawbey, City Engineer and Surveyor, Leicester. Deposit £3 3s. Tenders by October 7.

SEPTEMBER 22.—**Peebles.**—HOUSES.—The T.C. invite tenders for the mason, joiner, slater, plumber, plaster and painter works of five blocks of two double-storey cottages (Type B). Quantities of Mr. J. Walter Buchan, Town Clerk, Peebles.

SEPTEMBER 22.—**Rochdale.**—HOUSES.—The Housing Committee invite tenders for the following works in connection with the first instalment of dwellings on the Spotland site:—(*a*) erection of houses; (*b*) house drainage and common drains; (*c*) fencing. The Committee also invite tenders for the construction of certain streets and the sewers in connection therewith on the same site. Particulars of Mr. Wm. Henry Hickson, Town Clerk, Town Hall, Rochdale.

SEPTEMBER 22.—**Rochford.**—REPAIRS.—The Guardians invite tenders for the repair of the Workhouse Laundry, Rochford, relaying 200 square yards of tarpaving and 30 square yards of concrete at Acacia-road, Rochford. Particulars of the Master of the Workhouse, Rochford.

SEPTEMBER 22.—**Stowmarket.**—HOUSES.—The Urban District Council invite tenders for erecting ten houses in Cardinalls-road, Stowmarket. Specifications of the Architects, Messrs. Hunt & Coates, Bury St. Edmund's and Stowmarket.

✱SEPTEMBER 22.—**Swansea.**—SCHOOL, &C.—The Swansea Education Committee invite tenders for the erection of a new secondary school for girls and enlargements of the existing one for boys, in Dynevor-place, Swansea.

SEPTEMBER 23.—**Aberdare.**—HOUSING, &C.—The U.D.C. invite tenders for (1) the construction of roads, &c., and erection of ten houses on the Abernant site; and (2) the laying-out of the Cwmneol site and the erection of 72 houses. Quantities of Mr. W. D. Jenkins, A.R.I.B.A., Town Hall, Aberdare. Deposit £5.

SEPTEMBER 23.—**Bridgwater.**—REPAIRS.—The Council invite tenders for the repairs and painting to the pumping station at Ashford, the reservoir and cottage, Town Hall and municipal buildings, the Free Library and Isolation Hospital. Specifications of the Borough Surveyor, Municipal Buildings, Bridgwater.

SEPTEMBER 23.—**Easington.**—PAINTING.—The Rural District Council of Easington invite tenders for painting and decorating Thorpe Isolation Hospital. Quantities of Mr. J. M. Longden, Clerk, Easington, County Durham.

SEPTEMBER 23.—**Llandaff.**—ADDITIONS.—Tenders are invited for considerable additions to the Retreat, Fairwater-road, Llandaff, for F. S. Duncan, Esq. Quantities of Mr. G. E. Halliday, Esq., 9, Quay-street, Cardiff.

SEPTEMBER 23.—**Rotherham.**—HOUSES.—The Housing Committee invite tenders for the erection of a further 130 houses and the construction of roads and sewers connected therewith on the Doncaster-road site, Rotherham. Concrete specialists are invited to submit tenders for constructing the houses with concrete in lieu of brick. Quantities of Mr. Chas. A. Broadhead, architect, St. George's Hall, Rotherham.

SEPTEMBER 23.—**Salford.**—PAINTING.—The T.C. invite tenders for painting the exterior of the Regent-road and the Height branch libraries. Particulars from the borough engineer, Town Hall, Salford.

✱SEPTEMBER 23.—**Wembley.**—HOUSES.—The Wembley Urban District Council invite tenders for the erection of 18 houses on the Christchurch Estate, Wembley. Alternative tenders are desired for the erection of the houses in other forms of construction than brick. Quantities of the Surveyor to the Council, Council Offices, Wembley. Deposit £2 2s.

✱SEPTEMBER 24.—**Hitchin.**—The Hitchin U.D.C invite tenders for the erection of 76 cottages in Bethel lane, Hitchin.

SEPTEMBER 24.—**Manchester.**—HOUSING.—The Public Health Committee invite tenders for the erection of the following sets of cottages on the Blackley Estate:—No. 8, 16; No. 9, 26; No. 10, 24; No. 11, 6; No. 12, 16; No. 13, 54; No. 14, 50; No. 15, 6; No. 16, 20; No. 17, 20; No. 18, 6. Quantities at the office of the city architect, Town Hall, Manchester. Deposit £2 2s.

SEPTEMBER 24.—**Seaham Harbour.**—HOUSING.—The Seaham Harbour Urban District Council invite tenders for the erection of twelve semi-detached houses (a first section of about 300 houses), on a site adjoining Princess-road. Quantities of Mr. Jas. W. Richardson, clerk, Council Offices, Seaham Harbour. Deposit £3 3s.

SEPTEMBER 24.—**Sheffield.**—HOUSES.—The Estates Committee of the City Council invite tenders for the erection of 752 houses on the Brushes Estate, Firth Park. Contractors may tender for one or more sections of the scheme, which is divided into 12 groups of various numbers of houses. Quantities of Mr. F. E. P. Edwards, City Architect, Town Hall, Sheffield. Deposit £2 2s.

SEPTEMBER 25.—**Leeds.**—HOUSES.—The Corporation invite tenders for the erection of 85 houses on the Ivy House Estate, off York-road, Leeds; and 86 houses on the Hawksworth Wood Estate, Kirkstall, Leeds. Quantities of Mr. W. T. Lancashire, City Engineer, Municipal Buildings, Leeds. Deposit, £1 1s.

SEPTEMBER 25.—**Southwark.**—ALTERATIONS.—The Guardians invite tenders for the alterations at their offices in Ufford-street, Blackfriars-road, S.E. Quantities of Mr. A. Saxon Snell, 9, Bentinck-street, W. 1. Deposit £5.

SEPTEMBER 26.—**West Hartlepool.**—VERANDAHS. The Guardians of Hartlepool Union invite tenders for erection of verandahs at Howbeck Infirmary. Specification of Mr. J. G. Bell, Architect, Scarborough-street, West Hartlepool.

✱SEPTEMBER 26.—**London, E.C.**—The Commissioners of His Majesty's Works, Storey's Gate, Westminster, S.W. 1, invite tenders for the erection of a telephone exchange at the corner of Great Tower-street, St. Dunstan's Hill, E.C.

✱SEPTEMBER 26.—**Woking.**—The Woking Urban District Council invite tenders for the erection of 21 pairs of cottages at Woking Village, of three different types. Plans and bills of quantities may be obtained upon payment of two guineas.

SEPTEMBER 27.—**Chapel-en-le-Frith.**—PAINTING.—The Guardians invite tenders for painting and renovating the inside and outside of the Poor-Law Institution buildings at Chapel-en-le-Frith. Specification of the Master of the Poor-Law Institution, Chapel-en-le-Frith.

SEPTEMBER 27.—**Lewisham.**—PAINTING.—The Guardians invite tenders for the painting, decorating, and general repairs of the workhouse and infirmary, together with paving and road repairs. Quantities of Mr. W. R. Owen, Clerk to the Guardians, Guardians' Offices, 394, High-street, Lewisham, S.E. 13. Deposit £5.

SEPTEMBER 27.—**Pontypool.**—HOUSES.—The Pontypool R.D.C. invite tenders for the erection of six houses in Llangibby Village. Quantities of Messrs. Lougher & Co., architects, Pontypool.

SEPTEMBER 29.—**Barnes.**—HOUSES.—The U.D.C invite tenders for the erection of houses as under:—(Contract No. 1) Limes-avenue, 12 houses of two types; (2) Rosemary-lane, 16 houses of three types; (3) Kew Meadows Footpath, 14 houses of two types. Quantities of Mr. G. Bruce Tomes, Surveyor, The Council House, Mortlake, S.W. 14. Deposit £1 1s.

SEPTEMBER 29.—**Carlisle.**—ALTERATIONS.—The Corporation invite tenders for alterations to 3 and 4, George-street. Quantities of Mr. H. C. Marks, city engineer, 36, Fisher-street, Carlisle. Deposit £1 1s.

SEPTEMBER 29.—**Deptford.**—CONVERSION.—Tenders are invited by the Borough Council for the conversion of two houses, Nos. 27 and 31, Wickham-road, into flats. Quantities of Mr. F. Wilkinson, Borough Engineer, Town Hall, New Cross-road, S.E. 14.

✱SEPTEMBER 29.—**Lowestoft.**—Tenders are invited for the erection of 22 cottages on Beccles-road, Lowestoft.

SEPTEMBER 29.—**Stratford-upon-Avon.**—The Borough of Stratford-upon-Avon invite tenders for the following work:—(1) Erection and completion of 70 houses in the Evesham-road, in the said Borough; (2) the construction of roads and sewers in connection with the scheme.

✱SEPTEMBER 30.—**London.**—The Commissioners of H.M.O.W. invite tenders for the foundations, &c., for the New Sorting Office, Mount Pleasant, E.C.

✱SEPTEMBER 30.—**London.**—The East Ham Council invite tenders for the erection of houses under the Housing, Town Planning &c., Act, 1919.

SEPTEMBER 30.—**Lyme Regis.**—HOUSES.—The Town Council invite tenders for the erection of 10 workmen's dwellings. Specifications of Messrs. Symes and Madge, architects, Chard, or at the Office of the Borough Surveyor, Lyme Regis. Deposit £1 1s.

SEPTEMBER 30.—**Mitcham.**—ALTERATIONS.—The U.D.C. invite tenders for alterations, &c., required at "Woodlands," Devonshire-road, to adapt the premises for use as a creche, &c. Specification of the surveyor, Offices of the U.D.C., The Broadway, Lower Mitcham.

SEPTEMBER 30.—**Newton-in-Makerfield.**—HOUSE.—The U.D.C. invite tenders for the erection of a house at their new gas works, Wargrave-road, Earlestown. Quantities from Mr. J. Elston, architect to the Council, Market Chambers, Earlestown. Deposit £1.

SEPTEMBER 30.—**Southgate.**—HOUSES.—The U.D.C. invite tenders for the erection of ninety-two houses, Highfield-road, Winchmore-hill. Quantities of the surveyor, Council Offices, Palmers-green, N. 13.

SEPTEMBER 30.—**Whitwood.**—Various Works.—The West Riding Education Committee invite whole or separate tenders for the following works:—Whitwood Mere Council School, proposed teachers' room and w.c.; also improvement to the ventilation of the class-rooms. Quantities of the West Riding Architect, County Hall, Wakefield. Deposit £1.

✱OCTOBER 1.—**London.**—The Guardians of the Parish of St. Leonard, Shoreditch, invite tenders for external painting, pointing and repairs to the whole of the Kingsland-road house and infirmary buildings, nurses' home, mortuary, &c., in Kingsland-road, E., and Hoxton-street, N., and the Casual Wards in Reeves-place, N.

✱OCTOBER 1.—**London.**—The Guardians of Wandsworth Union invite tenders for painting works, &c. (*a*) at the Infirmary, St. John's-hill; (*b*) at the Intermediate Schools, Swaffield-road.

OCTOBER 1.—**Orsett.**—HOUSES.—The R.D.C. invite tenders for the erection of 32 houses at Little Thurrock, near Grays, Essex. Quantities of Mr. James Beck, Clerk to the Council, 2, Orsett-road, Grays. Deposit £3.

OCTOBER 1.—**Shoreditch.**—PAINTING, REPAIRS, &C. The Guardians of the Poor of the parish of St. Leonard, Shoreditch, invite tenders for external painting, pointing, and repairs to the whole of the Kingsland-road house and infirmary buildings, nurses' home, mortuary, &c., in the Kingsland-road, E., and Hoxton-street, N., and the casual wards in Reeves-place, N. Quantities of the Guardians' Architect, Mr. F. Danby Smith, A.R.I.B.A., Parliament-mansions, Victoria-street, S.W. 1. Deposit £5.

OCTOBER 3.—**Hammersmith.**—POST OFFICE.—The Commissioners of His Majesty's Works, &c., invite tenders for the erection of a new branch post office at Hammersmith, W. 6. Quantities from the Director of Contracts, H.M. Office of Works, Storey's-gate, Westminster, S.W. Deposit £1 1s.

OCTOBER 3.—**Huddersfield.**—The Corporation invite tenders for the erection of a car depot at St. Thomas-road, Longroyd Bridge. Quantities of Mr. R. F. Campbell, Borough Engineer, 1, Peel-street, Huddersfield.

✱OCTOBER 3.—**London.**—The Commissioners of H.M.O.W. invite tenders for the erection of a New Branch Post Office at Hammersmith, W.6.

OCTOBER 4.—**Brierley Hill.**—HOUSING.—The Urban District Council invite tenders for the erection of 90 houses of various types (the whole or part) on the High Ercal site. Quantities of Mr. John Yorke, surveyor, Town Hall, Brierley-hill. Deposit £10 10s.

✱OCTOBER 6.—**London, E.**—The London County Council invite tenders for the supply and erection of oak wrought framed, moulded and braced carriage and foot gates to the Royal entrance at Victoria Park, E.

✱OCTOBER 6.—**Newport (Mon.)**—The Housing Committee of the Newport Corporation invite tenders for the erection of the first 100 houses on the Somerton Estate.

OCTOBER 6.—**Romford.**—ALTERATIONS, &C.—The Essex County Council invite tenders for carrying out alterations and additions to the Romford Police Station. Quantities of Mr. G. Topham Forrest, county architect, County Architect's Office, Chelmsford. Deposit £2 2s.

✱OCTOBER 6.—**Watford.**—The Watford U.D.C. invite tenders for the erection of 40 cottages on the Willow-lane Estate, Watford.

✱OCTOBER 6.—**Watford.**—The Watford U.D.C. invite tenders for the erection of 40 cottages on the Harebreaks Estate, Watford.

✱OCTOBER 7.—**Leicester.**—The Estates Committee of the Corporation of Leicester invite tenders for the erection of the first portion of the Coleman-road Housing Scheme consisting of 120 houses.

✱OCTOBER 14.—**Farnham.**—The Farnham U.D.C. invite tenders for (1) Thirty-four houses by four separate tenders in three groups of eight houses and one of ten houses; (2) Roads, sewers, footpaths, surface water drains, &c.; (3) Fences; (4) Planting hedges, trees, shrubs, &c., preparing for sowing verges and an open space.

✱OCTOBER 15.—**Chepstow.**—The Chepstow R.D.C. invite tenders for the erection of the first twenty houses of the Roggiett Scheme, near Severn Tunnel Junction Station.

✱NO DATE.—**Ashwell.**—The Ashwell R.D.C. invite tenders for the erection of dwellings for the working classes in several parishes.

NO DATE.—**Birmingham.**—PAINTING.—Tenders are invited for the external painting of 200 wooden bungalows. Quantities of Mr. J. W. Wilson, Longbridge Estate Office, Birmingham.

NO DATE.—**Evesham.**—HOUSES.—The R.D.C. invite tenders for the erection of twenty-four cottages at Badsey and sixteen cottages at South Littleton. Quantities of Mr. R. J. Atkinson, Architect, Union Offices, Evesham. Deposit, £2 2s.

NO DATE.—**Howdon-on-Tyne.**—Tenders are invited for the painting and whitewashing the outside of Shipwright's Buildings, Howdon-on-Tyne. Particulars of Mr. J. E. Hayhoe, 54, Gallant-terrace, Howdon.

NO DATE.—**Hucknall.**—Tenders are invited for the erection of a bakery at Hucknall. Qunatities of J. C. Howitt, Secretary, Hucknall Torkard Industrial Provident Society, Ltd., Hucknall. Deposit, £2 2s.

NO DATE.—**Hull.**—BUILDING.—Tenders are invited for the erection of a two-storey building, about 100 ft. × 60 ft., Sculcoates-lane, Hull, for Messrs. Blundell, Spence & Co., Ltd. Quantities of Messrs. B. S. Jacobs & Snowden, Green Ginger, Hull.

✱NO DATE.—**Ipswich.**—The County Borough of Ipswich invite tenders for the erection of 18 houses upon the Hadleigh-road site.

NO DATE.—**Kirkcaldy.**—FACTORY.—Tenders are invited for the excavation of brick and concrete works, iron and steel works, carpenter and joiner and glazier works, plumber work and painting work, in connection with the erection of a factory at Wemyss Station, for the British Patent Fuels, Ltd. Quantities of Mr. W. Williamson, Royal Bank Buildings, Kirkcaldy.

NO DATE.—**Meathop, Grange-over-Sands.**—Tenders are invited for the various works required in building a small hospital block at the Westmoreland Sanatorium, Meathop, Grange-over-Sands. Quantities of Mr. John Hutton, Architect, Meathop, Grange-over-Sands.

NO DATE.—**Nottingham.**—HOUSES.—The Housing Committee of the Corporation invite tenders for the erection of 56 houses on the Coppice-road site, Nottingham. Quantities, &c., of the following architects:—Messrs. Brewill & Baily, 44, Parliament-street, Nottingham (in respect of 12 semi-detached houses). Mr. E. B. Hall, of 12, Victoria-street, Nottingham (in respect of 26 houses in pairs and blocks of four). Mr. W. H. Taylor, King-street, Nottingham (in respect of 18 houses in pairs and blocks of four). Deposit £1 1s.

NO DATE.—**Ruislip.**—COTTAGES.—The U.D.C. invite tenders for the erection of 34 cottages at Eastcote and 59 at Ruislip. Quantities of Mr. E. R. Abbott, Clerk, Council Offices, Northwood, Middlesex.

NO DATE.—**Tamworth.**—HOUSES.—The R.D.C. invite tenders for the erection of two or more houses up to forty on the Kettlebrook site. Quantities of Messrs. Newton & Cheatle, 39, Newhall-street, Birmingham.

NO DATE.—**Wednesfield.**—COTTAGES.—The U.D.C. invite tenders for the erection of fifty cottages. Particulars of Messrs. Hickton & Farmer, architects, Walsall.

NO DATE.—**Yeovil.**—HOUSES.—The R.D.C. invite tenders for the erection of 12 houses at Montacute; 6 houses at Mudford; 10 houses at Norton-sub-Hampton; 16 houses (eight on each of two sites), at South Petherton. Forms of tender of Messrs. Petter & Warren, 74, Hendford, Yeovil.

FURNITURE, MATERIALS, etc.

SEPTEMBER 22.—**Grimsby.**—MATERIALS.—The Corporation invite tenders for the supply of highway materials and sanitary requirements for one year. Tender forms of Mr. H. Gilbert Whyatt, M.Inst.C.E., Borough Engineer, Municipal Buildings, Grimsby.

SEPTEMBER 22.—**Manchester.**—TIMBER.—The Guardians invite tenders for the supply of timber to the Withington Institution, Nell-lane, West Didsbury. Particulars from the acting master at the institution.

SEPTEMBER 24.—**Newcastle-on-Tyne.**—ROAD MATERIALS.—The Town Improvement and Streets Committee invite tenders for the supply of whinstone and pitch. Forms of tender at the City Engineer's Office, Town Hall, Newcastle-on-Tyne

SEPTEMBER 25.—**Manchester.**—STORES.—The Lancashire and Yorkshire Railway Co. invite tenders for various stores required during twelve months. Particulars of Mr. Sharp, Stores Dept., Osborne-street, Manchester.

SEPTEMBER 26.—**Woodbridge.**—GRANITE.—The Urban District Council invite tenders for the supply of 200 tons of broken granite, 1½-inch gauge. Mr. Walter Brooke, Council Offices, Woodbridge.

SEPTEMBER 29.—**Billericay.**—ROAD MATERIALS.—The Billericay Rural District Council invite tenders for the supply of granite, Kentish rag, Kentish flint, gravel screenings, and sand, &c. Forms of tender from the surveyor, Mr. F. E. Ennals, Shelley-road Hutton.

NO DATE.—**West Ashford.**—GRANITE.—The R.D.C. invite tenders for the supply and delivery to railway stations of 1,000 tons of 1½-inch granite. Forms of tender of Mr. A. Sims, Surveyor to the Council, 17A, Bank-street, Ashford, Kent.

ENGINEERING, IRON AND STEEL.

SEPTEMBER 22.—**Dundee.**—RAILS.—The Harbour Trustees invite tenders for the supply and delivery of 25 tons of steel rails with the necessary fish plates and fish bolts; also 3 sets of switch blades. Specification of Mr. J. Hannay Thompson, Engineer, Dundee Harbour Trust.

SEPTEMBER 23.—**Salford.**—HEATING.—The T.C. invite tenders for the provision of a new heating boiler at the Regent-road Library. Particulars of the Borough Engineer, Town Hall, Salford.

SEPTEMBER 25.—**Manchester.**—CONDENSERS.—The Gas Committee invite tenders for the construction of five sets of water-tube condensers, each of a capacity of four million cubic feet per diem, and the dismantling and re-erection of two water-tube condensers, each of a capacity of two million cubic feet per diem, at their Bradford-road Station. Specification of Mr. F. A. Price, superintendent, Gas Dept., Town Hall, Manchester.

SEPTEMBER 25.—**Manchester.**—EXTENSIONS, &C.—The Gas Committee invite tenders for the construction and erection of six 200,000 cubic feet per hour, four-bladed exhausters and steam engines, together with governors, valves and connections, also two rotary blowers, to pass 10,000 cubic feet of air per hour, with steam engines complete, at their Bradford-road Station. Specification of Mr. F. A. Price, superintendent, Gas Dept., Town Hall, Manchester.

SEPTEMBER 25.—**Manchester.**—METERS.—The Gas Committee invite tenders for the construction and erection of two station meters, each of a capacity of 175,000 cubic feet per hour, and the dismantling, removal, and re-erection, including the provision of new drums, of five station meters, each of a capacity of 175,000 cubic feet per hour, on the site of their Bradford-road Station. Specification of Mr. F. A. Price, Superintendent, Gas Department, Town Hall, Manchester.

SEPTEMBER 27.—**Dimmocks Cote.**—BRIDGE.—The Cambridgeshire County Council invite tenders for the erection of a new ferro-concrete bridge on the Hennebique system over the River Cam at Dimmocks Cote, in the parish of Wicken. Drawings of Mr. H. H. Dunn, County Hall, Cambridge.

OCTOBER 7.—**Kingswear.**—RAILWAY WORKS.—The Directors of the Great Western Railway Co. invite tenders for a deviation of the Kingswear Branch Railway, near Kingswear Station—total length about 60 chains. Quantities of the Chief Engineer, Paddington Station, London.

ROAD, SANITARY, AND WATER WORKS.

SEPTEMBER 22.—**Abersychan.**—SEWERS.—The U.D.C. invite tenders for the construction of sewers, surface water drains, the excavation for carriage ways, &c., forming the foundation of carriage ways, &c., in connection with the lay-out of the Penygarn site. Quantities of Messrs. Kinshole & Bevan, Station-road, Bargoed. Deposit £5 5s.

SEPTEMBER 22.—**Bromley.**—STEAM ROLLER.—The Bromley Rural District Council invite tenders for the supply on hire of steam roller, during the year. Forms of tender of Mr. E. Haslehurst, Clerk, Union Offices, Bromley, Kent.

SEPTEMBER 22.—**Leeds.**—FOOTPATHS.—The Corporation invite tenders for the concreting, tar macadamising and laying of asphalte footpaths in the Drive. Quantities at Permanent Way Dept., 1, Swinegate, Leeds.

SEPTEMBER 23.—**Aberdare.**—ROADS.—The U.D.C. invite tenders for (1) the erection of 16 houses in blocks of four on the Abernant site, together with the construction of roads, sewers, and other works; (2) the erection of 72 houses on the Cwmncol site, together with the construction of roads, sewers and other works. Quantities of Mr. W. D. Jenkins, Architect to the Council Town Hall, Aberdare. Deposit £5.

SEPTEMBER 23.—**Frimley.**—KERBING.—The Frimley U.D.C. invite tenders for the supply and laying of about 4,300 lineal yards of hard blue pennant stone kerbing. Specification of Mr. H. Fox Hill, surveyor, Municipal Buildings, Camberley.

SEPTEMBER 23.—**Godalming.**—DRAINAGE.—The T.C. invite tenders for under-drainage work at the Unstead Sewage Farm. Particulars of the borough surveyor, Municipal Offices, Godalming.

SEPTEMBER 23.—**London.**—WATER MAIN.—The Managers of the Poplar and Stepney Sick Asylum invite tenders for a new cold water main, &c., at the District Sick Asylum, Devons-road, Bow, E. Specifications of Mr. S. G. Wright, Clerk, Devons-road, London, E.

✱SEPTEMBER 23.—**Wembley.**—ROADS AND SEWERS.—The Wembley Urban District Council invite tenders for the construction of roads and sewers in connection with their housing scheme on the Christchurch Estate, Wembley. Quantities of the Surveyor to the Council, Council Offices, Wembley, Middlesex. Deposit £2 2s.

✱SEPTEMBER 23.—**Willesden.**—The Willesden D.C. invite tenders for the laying of 16,000 yards super or thereabouts of wood paving in certain thoroughfares in the district of Willesden.

SEPTEMBER 24.—**Hawarden.**—SEWERAGE WORKS.—The Hawarden Rural District Council invite tenders for supplying and laying about 559 lineal yards of 12 in. diam. cast-iron pipes, 798 yards of 10 in. diam. ditto, and 567 yards of 6 in. diam. ditto. Also 164 lineal yards of 12 in. diam. stoneware pipe sewer, &c., at Queen's Ferry. Quantities of the Joint Engineers, Messrs. Elliott & Brown, A.M.I.C.E., Burton-buildings, Nottingham. Deposit £2 2s.

SEPTEMBER 27.—**Menai Bridge.**—RESERVOIR.—The U.D.C. invite tenders for the construction of an open-air reservoir and providing and laying of cast-iron pipes, valves, &c., in connection with the water supply of Menai Bridge. Specifications of Mr. W. Owen, Council Offices, Dale-street, Menai Bridge.

SEPTEMBER 30.—**Huddersfield.**—The Corporation invite tenders for the widening of Vicarage-road, Longwood, on the north-east side, together with the pulling down and re-erection of urinal and contingent works. Quantities of Mr. K. F. Campbell, Borough Engineer, 1, Peel-street, Huddersfield.

SEPTEMBER 30.—**Purley.**—STREET WORKS.—The Coulsdon and Purley Urban District Council invite tenders for the making up of Peaks-hill Rise, Purley. Specification of Mr. E. J. Gowen, clerk, Council Offices, Purley. Deposit £2.

✱OCTOBER 1.—**Ruislip-Northwood.**—The Ruislip-Northwood U.D.C. invite tenders for the construction and finishing of roads, and the sewers and manholes in connection with the Council's Housing Scheme at Ruislip.

NO DATE.—**Blackwell.**—The R.D.C. invite tenders for works of surface drainage at Pinxton. Particulars of Mr. H. Silcock, Surveyor, 67, West-gate, Mansfield.

NO DATE.—**Tamworth.**—ROAD AND SEWER.—The R.D.C. invite tenders for the construction of a street, and laying gas, water and sewer mains on the Kettlebrook site. Quantities of Messrs. Newton & Cheatle, 39, Newhall-street, Birmingham.

Auction Sales, Tenders, &c.

✱SEPTEMBER 22.—**London, E.C.**—Messrs. Leopold Farmer & Sons will sell, with possession, at Winchester House, Old Broad-street, E.C., valuable freehold building site, Moscow-road, Bayswater, W.

✱SEPTEMBER 25.—**Belfast.**—Messrs. W. P. Gray & MacDowell, Ltd., will conduct, by direction of the Lords Commissioners of the Admiralty, the final sale of the unused s.s. *Britannic* equipment.

✱SEPTEMBER 25.—**Liverpool.**—Messrs. Ed. Chaloner & Co., Farnworth & Jardine will sell at Sandhills, Liverpool, imported hardwood timber.

✱SEPTEMBER 25.—**Walthamstow.**—Messrs. Daniel Watney & Sons will sell, in one lot, at Winchester House, Old Broad-street, E.C., compact freehold building estate, Chestnuts Farm, 67½ acres, ripe for immediate development, with long frontages to Chingford-road, &c.

✱SEPTEMBER 26.—**Slough.**—Messrs. Joseph Hibbard & Sons, by joint instructions from the Board of Trade and the Surplus Disposal Board, will sell at Depot, Black Park, on the Uxbridge–Slough Road, stock of English timber, including 30,000 ft. cube of oak and beech, cut into planks and boards from 1 in. to 6 in.

✱SEPTEMBER 25, 26, 27.—**London, N.**—Messrs Weatherall & Green will sell by direction of the Disposal Board, at the National Projectile Factory, Ponders End, various useful building materials, quantity of iron girders.

✱SEPTEMBER 26.—**Uxbridge.**—Messrs. Knight, Frank & Rutley will sell at the Hanover-square Estate Room, four small dwelling houses at Uxbridge, well-placed business premises, building land, small licensed premises known as "The Cricketers Arms," small holding 35½ acres, allotment ground, also orchard land 10½ acres.

✱SEPTEMBER 30.—**Liphook (Hants).**—Messrs. Joseph Hibbard & Sons will sell at the Saw Mills, Longmoor Camp, stock of English soft and hard woods.

✱OCTOBER 1.—**Hants.**—Messrs. Joseph Hibbard & Sons will sell by order of the Board of Trade, at Longmoor Camp, near Liphook, Hants, stock of English soft and hard woods; large variety.

✱OCTOBER 8.—**Fittleworth, Sussex.**—A brick and tile works is included in Messrs. May & Rowden's auction at Wisborough Green.

✱OCTOBER 21 and 22.—**Lyndhurst (Hants).**—Messrs. Joseph Hibbard & Sons will sell by auction at the Depot adjoining Lyndhurst road Station (L. & S.W. Rly.). Stock of English soft and hardwoods.

✱NO DATE.—**Elmswell.**—Sales by tender by order of the Disposal Board (Ministry of Munitions). Elmsworth Aerodrome, Suffolk, for disposal as a whole, or the building and land on which they stand, without the aerodrome itself. The buildings are of corrugated asbestic sheeting, brick, corrugated iron and timber. There is a water supply, and electric light plant, permanent roads, &c.

✱NO DATE.—**Purfleet.**—Sale by tender by direction of the Disposal Board, Ministry of Munitions, screens, sieves, and ladders, at Transportation Stores, Purfleet, Essex.

✱NO DATE.—**Salford.**—The Borough of Salford Gas Department invite tenders for the purchase and removal of brickmaking machinery.

✱NO DATE.—**Tangmere and Ford.**—Sales by tender by Order of the Disposal Board, Ministry of Munitions. Tangmere Aerodrome for disposal as an aerodrome. Area 198½ acres. Ford (Littlehampton) Aerodrome, Sussex, for disposal as an aerodrome. Area 167 acres.

Competitions.

✱OCTOBER 31.—**Portishead.**—The Portishead Council Housing Committee invite designs for a lay-out and plan of a typical block of 2 houses. Premiums £50, £30 and £20.

✱NO DATE.—**Worcester.**—Designs are invited for a War Memorial. Particulars from the Chairman, County War Memorial, Shirehall, Worcester.

(*For further list of Competitions Open, see page 292*)

Public Appointments.

✱SEPTEMBER 20.—**Lambeth, S.E.**—The Metropolitan Borough of Lambeth invite applications for the position of Architect in connection with the Housing Scheme to be carried out by the Borough Council.

✱SEPTEMBER 20.—**Truro.**—The Cornwall County Council invite applications for (1) three draughtsmen; (2) one senior clerk. (Temporary appointments.)

✱SEPTEMBER 20.—**Wallasey.**—The Wallasey Council invite applications for the appointment of a temporary architectural assistant. Salary £230.

✱SEPTEMBER 20.—**Woolwich.**—The Metropolitan Borough of Woolwich invites applications for an assistant in the Borough Engineer's Department. Salary £300 per annum, inclusive.

✱SEPTEMBER 22.—**Bacup.**—The Bacup Borough Council invite applications for the appointment, in connection with their Housing and Town Planning Schemes, of an architectural assistant at a salary of £300.

✱SEPTEMBER 23.—**Stafford.**—The Corporation of Stafford require a clerk of works for their housing scheme

✱SEPTEMBER 24.—**Rotherham.**—Rotherham County Borough require a temporary architect's assistant with knowledge of housing and town planning. Salary £350.

✱SEPTEMBER 25.—**Doncaster.**—The Doncaster R.D.C. require the services of an Architectural assistant in the Surveyor's Department.

✱SEPTEMBER 26.—**London.**—The Metropolitan Asylums Board invite applications for the appointments of architectural and surveying draughtsmen in the department of the Engineer-in-chief.

✱SEPTEMBER 26.—**Merton.**—The Merton and Morden U.D.C. are desirous of appointing a fully-qualified architect for the purpose of designing and supervising the erection of about 250 to 350 houses.

✱SEPTEMBER 26.—**Stafford.**—The Staffordshire Education Committee invite applications for the appointment of two architectural assistants.

✱SEPTEMBER 27.—**London.**—The L.C.C. invite application for the positions of instructors in handicraft woodwork).

✱SEPTEMBER 27.—**Walsall.**—The Walsall Corporation require the services of a general foreman to take charge of the erection of houses in connection with their housing and land settlement schemes.

✱SEPTEMBER 29.—**Ruislip-Northwood.**—The Ruislip Northwood U.D.C. invite applications for the appointment of Clerk of Works under their Housing Scheme. Salary £6 per week.

SEPTEMBER.—**Leicester.**—The Director of Education of the City of Leicester invites applications for the appointment of a full-time Instructor in Plumbing and the Allied Building Trade subjects. Salary £350 per annum.

✱OCTOBER 6.—**Carlisle.**—The Cumberland County Council invite applications for the appointment of chief assistant to the county architect. Salary £300.

✱NO DATE.—**Basford (Nottingham).**—The Basford R.D.C. require the services of an architectural draughtsman. Salary £150.

✱NO DATE.—**Nuneaton.**—The Borough Engineer, Nuneaton, requires a junior architectural draughtsman. Salary £3 per week.

PROPOSED NEW BUILDINGS AND OTHER WORKS.*

IN these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works, at the time of publication, have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; L.G.B. for Local Government Board; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

ASPATRIA.—Plans passed: Motor garage, Park-road, for Mr. Joseph Hillary; alterations, Noble Temple, for Messrs. L. W. Towers & Co., Newcastle-on-Tyne.

BATH.—Plans approved: Alterations, The Lodge, Entry-hill; w.c. at garage, Henry-street; covered passage, Royal Hotel, Manvers-street; extension of workshop, Kingston-road; sanitary conveniences, 8, Edgar Buildings; flats, 31, Park-street; alterations, 48, Southgate-street; w.c., lavatory and cloak room, Lower Bristol-road; alterations and additions, 39, Combe Park; additions, Barley Stores, Lower Bristol-road; flats at 39 and 40, Park-street; Priestley Motor School and bungalow, Newbridge-road; alterations 7, Cheap-street; workmen's dwellings, Dolemeads.

BOLTON.—Plans passed by T.C.: Motor tower, &c., Blackburn-road, for Messrs. T. M. Hesketh & Sons; bay windows, &c., 457 and 459, Blackburn-road, for Messrs. W. Nicholson & Son; stable, Belmont-road, for Mr. J. W. Bateson; motor shed and petrol store, Ainsworth-road, for Messrs. T. & E. Ramsden; additions to premises, 617, Bury-road, for Mr. J. Sykes; extension of dyeworks, Bury-road, for Messrs. Twisse; two houses, Within's-lane, for Mr. Holt; store room, Weston-street, for Messrs. Ainsworth Bros.; addition to warehouse, Victoria Mill, Nelson-street, for Messrs. Holden Bros.; store and garage, Weston-street, for Holden Bros.; store, garage, and additions to mill, Weston-street, for Messrs. W. & C. Ainsworth, Ltd.; additions to cinema, St. George's-road, for Bolton temperance Union; pavilion, Bromwich-street, for The Bolton Borough Police; extension of shed, Hickory-street, for Messrs. Hodgkinson & Gillibrand; additions to premises, 96, Newport-street, for Mr. F. Whitby; transformer house, Canning-street, for North End Spinning Co.; alterations, 5 and 7, Soho-street, and 10, Marlstend-street, for Mr. W. Hall; garage, Miners' Hall, for the Lancashire & Cheshire Miners' Federation; petrol tanks and garage, Bridgeman-street, for the Anglo-American Oil Co.; garage, Apple-street, for Messrs. Leach & Co.

BRIDLINGTON.—Plans passed: Messrs. Blackmore & Sykes, for the construction of greenhouse at "Newcroft," Cardigan-road, for Mr. G. Waite; Mr. Bernard H. Stamford, County Architect, for the construction of baths and lavatories at the "Imperial" Boarding House, Sewerby-terrace, and of proposed servants' hall, at the "Red House," Sewerby-terrace, for the Governors of the High School for Girls; Mr. Wm. Lamb, motor garage at "Boughley" House, George-street, for Mr. Barnby; Mr. Hewetson, alterations at house in course of erection in Lamplugh-road, for Mr. H. W. Hewetson; Mr. C. F. Johnson, additions to 63, Wellington-road, for Mr. F. E. Brown; Mr. Henry T. Tate, County Land Agent, house at North Mount Farm, off Bempton-lane, for the East Riding County Council; Mr. M. B. Parkin, enclosed balcony at "Villa Flora," Marine-drive, for Mrs. Piercy, and alterations to the "Imperial" Sale Rooms, Quay-road, for Messrs. F. Purdon & Sons; also for motor garage in Summerfield-road, for Mr. F. E. Gray, and motor garage at "La Estancia," Marine-drive, for Mr. F. Gresham; Mr. Frank Holloway, greenhouse, at 2, Elm Villas, Bessingby-road.

BUCKIE.—Plans passed by T.C.: Houses, Main-street, for Mr. Smith; dormer windows, 97, Portessie, for Mrs. A. Clark.

CARNOUSTIE.—The Dean of Guild Court has passed plans for the extension of the boot factory of John Winter & Sons, Ltd.

CHELTENHAM.—Plans passed: Alterations, &c., "Pengwern," Albion-street, for Mr. A. Miles; additions, 1, Eden Villas, King's-road, for Mr. E. M. Yeend.

CIRENCESTER.—Plans passed: Store, 73, Castle-street, for Mr. C. A. Trotman; rebuilding of the "Marlborough Arms," Sheep-street, for the Stroud Brewery Co.

COALVILLE.—The County Education Committee proposes building a technical college in Bridge-street.

COLCHESTER.—Plans for new works at Hythe Quay for Vickers (Ltd.) have been passed.

DONCASTER.—The Education Committee have decided to establish a Handicraft Centre at the Old Free Library. Plans have been prepared to carry out the necessary alterations to the building.

DUDLEY.—Plans passed: Messrs. Goodwin, Foster, Brown, Ltd., extensions to warehouse, Tower-street, Dudley; Messrs. Raybould, Whitehouse, Ltd., new warehouse and stabling, Oxford-street, Dudley; Dudley Co-operative Society, Ltd., new premises, 201–2, High-street, Dudley; Messrs. J. Freeman & Co., new garage, 182, High-street, Dudley; Mr. John Holden, temporary lock-up shop, Halesowen-road, Netherton; Mr. Hy. Cherrington, dwelling house, Ednam-road, Dudley; Mr. J. W. H. Unit, new chain shop and engine house, 95, Quarry-road, Netherton; Mr. B. Tranter, alterations to and new lock-up shop, the Vine Inn, Wolverhampton-street, Dudley; The Wovlerhampton & Dudley Breweries, Ltd., re-building of premises, White Rose Inn, King-street, Dudley; Mr. James Lilley, dwelling house, Birmingham-road, Dudley; Mr. D. Southall, new workshop, High-street, Netherton; Messrs. John Thompson (Dudley), Ltd., extensions to works, Pear Tree-lane, Dudley; Mrs. E. Greaves, two dwelling houses with shops, Market-place, Netherton; Mr. Harrison, warehouse, Meeting-street, Netherton; Mr. H. Ridge, temporary motor house, 112, Northfield-road, Netherton; Mr. L. Cassell, alteration to shop, 7, Wolverhampton-street, Dudley.

ELLESMERE PORT.—The County Architect has been instructed to prepare plans for school buildings for 800 children.

EPPING.—The R.D.C. have decided to build 16 houses opposite the Sun and Whalebone, Harlow Common. Meanwhile a start has been made by Mr. Basil Scruby in the erection of concrete bungalows on the Harlow Estate

GUISBOROUGH.—Plans passed by R.D.C.: Conversion of slaughter house into dwelling house, &c., at Castleton, for Mr. Medd.

HACKNEY.—Applications approved by B.C.: alterations, &c., 64, Tottenham-road, for Mr. T. Tritt; sanitary addition, Braydon-road, for Messrs. J. Garey & Son; factory premises, 232, Stoke Newington High-street, for Messrs. Brooking Bros.; factory premises, Atherden-road, for Mr. J. W. Codrington; alterations, 45 and 51, Tottenham-road, for Mr. A. E. Robinson; additions, 23, Clapton Common, for Mr. W. H. Duncan; additions, 120, Lansdowne-road, for Mr. A. W. Bolton.

HALIFAX.—Plans passed by T.C.: Extension to weaving shed, Mile Cross-road, for Messrs. Courtaulds, Ltd.

HOVE.—Plans passed: Conversion of 4, Third-avenue, into five maisonettes, Mr. G. Austen, for Mr. B. Bull; motor spirit depot, Old Shoreham-road, Mr. A. H. Lainson, for the British Petroleum Co.; garage and cottage, "Framnaes," New Church-road, Mr. C. Ham, for Mr. F. O. Olsen; additions, 8, Medina-terrace, Mr. W. Willett, for Mr. F. G. Horne; additions, Waterloo-street, Mr. T. Garrett, for the Anchor Brewery Co.; alterations, Davigdor-road, Mr. W. H. Overton, for Messrs. Cribbs & Co.; conversion of 42, Hove Park Villas into flats, Mr. A. H. Lainson, for Capt. Clifford; addition, 59, Sackville-road, Mr. A. W. Levey, for Mrs. Jones; carbide store, Westbourne-place, for Mr. L. J. Freeman; alterations, 13, Queen-mews, Mr. Saunders, for Mr. W. F. Baker.

LEEDS.—Plans passed: Alteration of 14 lock-up shops into picture house, in Grand Arcade, for Messrs. J. T. Rothwell and F. G. Littlewood; alterations at Atlas Picture House, for Mr. J. N. Sharp; picture house, Harehills-lane, for Mr. A. Neild; alterations to Hippodrome, King Charles Croft, for the Variety Theatres Controlling Co.; picture house, Primitive-street, and Wellington-street, for Mr. Max Goldstone.

LUDDENFOOT.—Plans submitted by the Council for 56 houses at Warley Wood have been approved by the Housing Commission, and building operations are to start at an early date.

NOTTINGHAM.—Arrangements have been made by the Corporation for the re-purchase from the Duke of Newcastle of a site upon which it is proposed to proceed with the first portion of the city's housing schemes. The land has been acquired for £180 an acre, and tenders for building houses at an approximate cost of £331,000 have been recommended for acceptance.

PLYMOUTH.—Plans passed by T.C.: Messrs. Brown, Wills & Nicholson, preserved meats factory, Prince Rock; Messrs. C. Norrington & Co., alterations and additions chemical works, Cattedown; The Devon & Cornwall Homœpathic Hospital, addition to hospital, Lockyer-street; Mr. O. J. Buckingham, bathroom, 114, Fleet-street; Mr. Piper, garage rear of 4, Burgoyne Villas, Alma-road; Mrs. Marshall, addition at rear of 83, Cromwell-road; Mr. J. T. Gamlen, new roof, "Wyndhurst," St. Budeaux.

RICHMOND (SURREY).—An anonymous donor has offered to give £5,000 towards the erection of a nurses hostel, &c., in connection with the Royal Hospital as a war memorial.

ROCHDALE.—Plans passed: Power and boiler house at the Regent Mill, for John Bright & Bros.; oil and pattern stores in Whitehall-street, for John Holroyd & Co.; electricity sub-station in Royle-road, for the D.R. Cotton Mills.

STRETFORD.—Plans passed by U.D.C.: Store shed, 1, Radnor-street, for Mr. Frank A. Frost; workshop, Market-street, for Messrs. Grimshaw & Thomas; addition to works, First-avenue, for the Ford Motor Co. (England), Ltd.; Research laboratories and offices, Trafford Park, for the British Westinghouse Electric & Manufacturing Co., Ltd.; conversion of office to dwelling, Westinghouse-road, for Messrs. H. N. Morris & Co., Ltd.

THORNE.—The R.D.C. has submitted plans for six housing schemes to the Ministry of Health.

WALTHAMSTOW.—The housing scheme of the U.D.C. is about to be launched. A site, 12½ acres in extent, has been secured at Halfheads Farm, between Hale End and Beech Hall-road, five minutes' walk from Highams Park Station (Great Eastern Railway). The erection of the buildings, it is stated, will be supervised by Mr. G. W. Holmes, engineer to the Walthamstow Council, and the work is expected to be taken in hand almost immediately.

WISHAW.—A large canteen is to be erected by the Lanarkshire Steel Co.

WOLVERHAMPTON.—Plans passed by T.C.: T. Phillips, roof, Dudley-road; A. J. Stevens & Co., annex to packing house, and two brazing shops, Graiseley-hill; L. Edwards, warehouse, Stewart-street; Nock & Joseland, shed, 41, Bilston-street; Mander Bros., roof over yard and concrete roof and skylight in place of existing iron one, St. John's-street; Briton Motor Co., mess room and caretaker's house, Walsall-street and Horseley Fields; R. E. Probert, portable wooden shed, corner Wanderers-avenue and Dudley-road; Orme, Evans & Co., reconstruct roof over workshop, Herrick-street, and shed for transformer, Alexander-street; S. Bridgen, coal shed, Bell-place; Tay & Purcell, premises for treatment of cattle by-products, Foxes-lane; A. E. Longmore, greenhouse, Albert-road; W. S. Miller, house, Richmond-road; J. Oakley, garage, rear Kempton, Penn-road; Arnold & Sage, sectional hut, Derry-street; John Marston, Ltd., workshop, Penn-road; Showells Brewery, alterations, "Ash Tree Inn," Great Hampton-street; F. Smith, chimney stack, Pelham-street; Sunbeam Motor Co., electric switch room, Upper Villers-street.

FIRES.

LONDON.—Damage to the extent of £10,000 has been caused by fire to the Grosvenor Hotel, Victoria.

* See also our List of Competitions, Contracts, etc.

NEW COMPANIES.

The particulars quoted below have been compiled by Messrs. Jordan & Sons, Ltd., Company Registration Agents, of 116 & 117, Chancery-lane, W.C. 2, from the documents available at the Companies Registry.

THOMAS & COCKIN, LTD. (155,475). Registered May 26, 1919. To carry on the business of builders, contractors, brassfounders, mechanical and general engineers, &c. Nominal capital, £5,000.

R. A. ROBERTSON, LTD. (155, 526). Registered May 27, 1919. To carry on the business of mechanical and general engineers, &c. Nominal capital, £1,000.

NATIONAL IMPROVED HOUSING CO., LTD. (155,537). Registered May 27, 1919. 26, Victoria street, S.W. To acquire and carry on the business of contractors for public works, private dwelling houses, &c. Nominal capital, £25,0000,

COACKLEY & WALTON, LTD. (155,544). Registered May 28, 1919. To carry on the business of constructional engineers and contractors, builders and contractors, &c. Nominal. capital, £20,000.

D.O.T. KEYLESS LOCKS CO., LTD. (155,577). Registered May 29, 1919. St. Giles'-terrace, Northampton. To acquire patents, &c., as to relation to keyless locks. Nominal capital, £15,005.

HOARE & Co. (CONTRACTORS), LTD. (155,699). Registered June 2, 1919. To carry on the business of builders and contractors. Nominal capital £5,000.

WARREN CEMENT WORKS, LTD. (155,788). Registered June 5, 1919. Warren Cement Works, Hart-road, Hartlepool. To acquire and carry on the business of Portland cement and basic slag manufacturers and merchants. Nominal capital, £150,000.

PITCHER CONSTRUCTION CO., LTD. (155,817). Registered June 5, 1919. To carry on the business of builders and contractors. Nominal capital £10.000.

GEORGE TURNBULL & Co., LTD. (155,832). Registered June 6, 1919. 23, Philpot-lane, E.C. 3. To acquire and carry on the business of manufacturers and dealers in bricks, fire-bricks, tiles, &c. Nominal capital £80,000.

NEWHEY BRICK CO., LTD. (155,848). Registered June 6, 1919. The Brickworks, Huddersfield Road, Newhey, nr. Rochdale. To acquire and carry on the business as indicated by title. Nominal capital, £20,000.

A. K. SHELDON & Co., LTD. (155.894). Registered June 10, 1919. 83-85, Great Western Street, Moss Side, Manchester. To acquire and carry on the business of timber merchants. Nominal capital, £2,000.

JOHN METCALF, LTD. (155,910). Registered June 10, 1919. "Arcade Works," Theatre Street, Preston. To acquire and carry on the business of heating, ventilating, domestic and general engineers and ironfounders, Nominal capital, £3,000.

SALES & TEATHER, LTD. (155,960). Registered June 11, 1919. To acquire and carry on the business of timber merchant. Nominal capital, £30,000.

BERNARD PUMFREY, LTD. (156,020). Registered June 13, 1919. To carry on the business of joiners, builders and contractors. Nominal capital, £14,000.

PRICES CURRENT OF MATERIALS.*

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry. Since our last issue several prices have been revised.—Ed.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge.

	£ s. d.
Best Stocks	3 16 6

Per 1000, Delivered at London Goods Stations.

	£ s. d.		£ s. d.
Flettons	2 15 6	Best Blue Pressed Staffordshire	9 3 6
Best Stourbridge Fire bricks	10 10 0	Do. Bullnose	9 8 6
		Blue Wire Cuts	7 13 6
GLAZED BRICKS—			
Best White, Ivory, and Salt Glazed Stretchers	21 10 0	D'ble Str'tch'rs	28 10 0
Headers	21 0 0	D'ble Headers	25 10 0
Quoins. Bullnose and 4½in. Flats	26 10 0	One Side and two Ends	29 10 0
		Two Sides and one End	30 10 0
		Splays and Squints	28 0 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours, Hard Glaze, £5 10s. extra over white.

	s. d.	
Thames Ballast	15 6	per yard, delivered
Fit Sand	18 6	
Thames Sand	20 0	
Best Washed Sand	19 0	2 miles radius
½in. Shingle for Ferro-Concrete	18 0	Paddington.
¼in.	19 0	

Per ton, delivered in London area.

	£ s. d.		£ s. d.
Best Portland Cement	3 13 6		3 16 6

66/6 alongside at Vauxhall in 80-ton lots.

Ferrocrete per ton extra on above	5 0
Best Ground Blue Lias Lime	2 10 0 at rly. depot.

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks. The sacks are charged at 2s. 6d. each and credited at 2s. each if returned in good condition within three months.

Grey Stone Lime ..... 55s. 0d. per ton delivered.
Stourbridge Fireclay in s'cks 42s. 6d. per ton at rly. dpt.

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	2 0
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	2 1½
Do. do. delivered on road waggons at Nine Elms Depot	2 2½
PORTLAND STONE—	
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L. & S.W.R., South Lambeth Station, G.W.R., and Milcage Station G.W.R., per ft. cube	3 6½
Do. do. delivered on road waggons at above stations, per ft. cube	3 7½
White basebed, 3d. per ft. cube extra.	

NOTE.—½d. ft. cube extra for every foot over 20 ft. average.

RANDOM BLOCKS—Per Ft. Cube, delivered at Rly. Dpot.

	s. d.		s. d.
Ancaster in blocks	3 2	Closeburn Red Freestone	3 4
Beer in blocks	1 11		
Grinshill in blocks	2 9	Red & White Mansfield random block	5 2
Darley Dale in blocks	3 2	Yellow Magnesian Limestone do. do	4 2

YORK STONE, BLUE—*Robin Hood Quality.*

Delivered at any Goods Station London.

	s. d.
Scappled random blocks ..... Per Ft. Cube	7 0
6 in. sawn two sides landings to sizes (under 30 ft. super.) ..... Per Ft. Super	5 6
6 in. rubbed two sides, ditto ..... "	6 2
3 in. sawn two sides slabs (random sizes) "	2 5
2 in. to 2½ in. sawn one side slabs (random sizes) ..... "	1 5½
1½ in. to 2 in. ditto, ditto ..... "	1 3

HARD YORK—

Delivered at any Goods Station London.

	s. d.
Scappled random blocks ..... Per Ft. Cube	6 0
6 in. sawn two sides landing to sizes (under 40ft. super.) ..... Per Ft. Super	5 0
6 in. rubbed two sides ditto ..... "	6 0
4 in. sawn two sides slabs (random sizes) "	2 10½
3 in. ditto, ditto "	2 2
2 in. self-faced random flags .. Per Yard Super	6 10

WOOD.

(The following prices are the Controller's prices fixed Feb. 7, 1919. The control is now removed.)

Pursuant to paragraph 3 of the Timber Control Order, 1918, the Controller of Timber Supplies hereby gives notice that until further notice the following shall be the maximum prices at which imported timber may be sold. These prices are per standard landed and in store.

WHITE SEA REDWOOD.

Inches	1st £ s.	2nd £ s.	3rd and unsorted £ s.	4th £ s.
4 × 11	54 10	52 10	49 10	47 10
4 × 9	50 10	48 10	45 10	43 10
4 × 8	47 10	45 10	42 10	40 10
4 × 7	47 10	45 10	42 10	40 10
3 × 8	46 10	44 10	41 10	39 10
3 × 7	46 0	44 0	41 0	39 0
3 × 6	45 10	43 10	40 10	38 10
3 × 5	45 10	43 10	39 10	37 10
2½ to 3 × 11	53 10	51 10	48 10	46 10
2½ to 3 × 9	48 0	46 0	43 0	41 0
2½ × 7 to 8	46 0	44 0	41 0	39 0
2½ × 6	45 10	43 10	40 10	38 10
2½ × 5	45 10	43 10	39 10	37 10
2½ × 11	53 10	51 10	48 10	46 10
2½ × 9	48 0	46 0	43 0	41 0
2½ × 8	46 10	44 10	41 10	39 10
2½ × 7	46 0	44 0	41 0	39 0
2½ × 6	45 10	43 10	40 10	38 10
2½ × 5	44 10	42 10	39 10	37 10
2½ × 4	44 10	42 10	40 0	38 0

UNSORTED LARCHWOOD at 3rd Archangel Redwood Prices.

Boards, 1st and 2nd, £1 10s. extra.
Boards, 3rd and 4th, £1 extra.

WOOD (*Continued*).

FEATHER EDGED BOARDS, £40 10s. per std.
SAWN LATHS, 3s. per bundle.
U/S SLATING BATTENS (yellow and white and strips), £35.

SWEDISH AND NORWEGIAN FLOORING AND MATCHING.
U/S Red and White.

Per 100ft. super.	Per 100 ft. super
1¼in. P.E. at 60/-	¾in. P.E. at 30/-
1½in. P.E. at 50/-	⅝in. P.E. at 25/6
1in. P.E. at 40/-	½in. P.E. at 20/6
⅞in. P.E. at 35/-	

T. & G. and Match Lining at 6d. per square extra.

PLANED BOARDS—11 in., £45 per standard; 10 in., £43 per standard; 9 in., £43 per standard; 8 in., £41 per standard.

YELLOW PINE.

Inches	1st £ s.	2nd £ s.	3rd £ s.	4th £ s.
3 × 12 and up	67 0	55 0	50 10	44 0
3 × 11	64 0	53 0	48 10	44 0
3 × 10	58 0	48 0	44 0	42 0
3 × 9	57 0	47 0	43 0	41 0
3 × 8	55 0	45 0	42 0	39 0
3 × 7	55 0	45 0	42 0	39 0
3 × 6 and down	52 0	42 0	40 0	37 0

For complete specification and controlled prices, see "London Gazette," February 7, 1919.

Dry Wainscot Oak, per ft. super. as inch	0	2	6	to 0	3 0
¼ in. do. do.	0	2	0	to 0	2 6
Dry Mahogany—Honduras, Tabasco, African, per ft. super. as inch	0	2	6	to 0	3 0
Cuba. Mahogany	0	3	6	to 0	4 0
Teak (Rangoon, Moulmein or Java), per load	60	0	0	to 85	0 0
American Whitewood planks, per ft. cube	0	18	0	to 1	0 0
Scotch Glue, per cwt.	5	5	0	..	—
Liquid Glue, per gallon	0	17	0	..	—

SLATES.

1st quality slates from Bangor or Portmadoc in truck load delivered London area. Per 1,000 of 1,200.

		£ s. d.
Best Blue Bangor Slates,	24 by 12	48 10 0
" " "	22 by 12	35 0 0
First quality "	22 by 11	32 5 0
" "	20 by 12	32 0 0
Best Blue Portmadoc	20 by 10	27 10 0
" "	18 by 10	22 0 0
First quality "	18 by 9	18 0 0
" "	16 by 10	17 0 0
" "	16 by 8	13 5 0

TILES.

	Per 1,000 f.o.r. London. £ s. d.
Best machine-made tiles from Broseley or Staffordshire district	6 2 6
Ditto hand-made ditto	6 7 6
Ornamental ditto	6 10 0
Hip and valley tiles (per dozen)	0 14 0

METALS.

WROUGHT-IRON TUBES AND FITTINGS—
(Discount off List for lot of not less than £10 net value delivered direct from works. 5 per cent. less carriage forward if sent from London stocks.)

	Sizes up to and including 2 in. Tubes.	Fittings.	Sizes 2½ in. to 6 in. Tubes.	Fittings.
Gas	26½	32½	31½	37½
Water	18½	28½	26½	35
Steam	11½	25	21½	32½
Galvanised Gas	7½	25	12½	30
" Water	+ 2½	—21½	—50	—27½
" Steam	+ 12½	—17½	+2½	—25

L.C.C. COATED SOIL PIPES—London Prices ex works.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles s. d.
2 in. per yd. in 6 fts.	4 7	3 4	4 0
2½ in. "	5 6	3 8	5 0
3 in. "	6 9	4 0	6 0
3½ in. "	7 6	5 0	7 0
4 in. "	7 11	5 8	8 0

RAIN-WATER PIPES, &c.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles s. d.
2 in. per yd. in 6fts. plain	3 4	1 10	2 6
2½ in. " "	3 9	2 2	3 0
3 in. " "	4 5	2 8	4 0
3½ in. " "	5 4	3 2	4 8
4 in. " "	5 7½	3 10	5 8

L.C.C. DRAIN PIPES,—9 ft. lengths. London Prices. 4 in., 8s. 4d. .. 5 in., 9s. 7d. .. 6 in., 11s. 9d.

	Per ton in London. £ s. d.		£ s. d.
IRON—			
Common Bars	26 10 0	to	27 10 0
Staffordshire Crown Bars good merchant quality	27 0 0	..	27 10 0
Staffordshire "Marked Bars"	28 0 0	..	29 0 0
Mild Steel Bars	23 10 0	..	24 10 0
Steel Bars, Ferro-Concrete quality, basis price	23 0 0	..	24 0 0
Hoop Iron, basis price	29 0 0	..	30 0 0
" " Galvanised	40 0 0	..	—
Sheet Iron Black—			
Ordinary sizes to 20 g.	26 10 0	..	27 10 0
" " 24 g.	27 10 0	..	28 10 0
" " 26 g.	29 0 0	..	30 0 0
Sheet Iron, Galvanised flat, ordinary quality—			
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	34 0 0	..	—
Ordinary sizes to 22 g. and 24 g.	34 0 0	..	34 10 0
Ordinary sizes to 26 g.	36 0 0	..	36 10 0

Nominal prices.

METALS (*Continued*).

	Per ton in London. £ s. d.		£ s. d.
Sheet Iron, Galvanised, flat, best quality—			
Ordinary sizes to 20 g.	35 10 0	..	Nominal prices.
" " 22 g. and 24 g.	36 0 0	..	
Ordinary sizes to 26 g.	39 0 0	..	
Galvanised Corrugated Sheets—			
Ordinary sizes, 6 ft. to 8 ft. 20 g.	33 0 0	..	Nominal prices only.
Ordinary sizes, 22 g. and 24 g.	33 10 0	..	
Ordinary sizes, 26 g.	32 10 0	..	
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	28 0 0	..	—
Best Soft Steel Sheets, 20 g. and 24 g.	28 10 0	..	—
Best Soft Steel Sheets, 26 g.	30 0 0	..	—
Cut Nails, 3 in. to 6 in.	31 0 0	..	32 0 0

(Under 3 in. usual trade extras.)

LEAD, &c.

Delivered in London.

	£ s. d.		£ s. d.
LEAD—Sheet, English, 4 lb. and up	37 0 0	..	—
Pipe in coils	37 10 0	..	—
Soil Pipe	40 0 0	..	—
Compo pipe	42 10 0	..	—

NOTE—Country delivery, 20s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra.

Old lead, ex London area, at Mills per ton	23 10 0	..	—
Do., ex country, carriage forward per ton	24 10 0	..	—
COPPER—			
Strong Sheet per lb.	0 2 3	..	—
Thin " "	0 2 4	..	—
Copper nails "	0 2 3	..	—
Copper wire "	0 2 4	..	—
TIN—English Ingots "	0 2 10	..	—
SOLDER—Plumbers' "	0 1 3	..	—
Tinmen's "	0 1 5	..	—
Blowpipe "	0 1 8	..	—

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

	Per Ft.		Per Ft.
15 oz. fourths	7½d.	32 oz. fourths	10½d.
" thirds	8d.	" thirds	11½d.
21 " fourths	8½d.	Fluted, Obscured and Enamelled Sheet.	
" thirds	8¾d.		
26 " fourths	9½d.	15 oz.	7½d.
" thirds	10½d.	21 "	8½d.

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
⅛ Rolled plate (unobtainable)	—
¼ Rough rolled and rough cast plate	6d.
½ Rough rolled and rough cast plate	6½d.

Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish white ..... 6½d.
Ditto, tinted ..... 7½d.
Rolled Sheet ..... 6d.
White Rolled Cathedral ..... 6d.
Tinted do. ..... 6½d.

PAINTS, &c.

		£ s. d.
Raw Linseed Oil	in pipes per gallon	0 9 6
" " "	in barrels "	0 9 10
" " "	in drums "	0 10 3
Boiled " "	in barrels "	0 10 4
" " "	in drums "	0 10 6
Turpentine	in barrels "	0 11 5
"	in drums (10 gall.) "	0 11 11
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)		75 0 0
GENUINE WHITE LEAD PAINT— "Blackfriars," "Nine Elms," "Park," and other best brands (in 14 lb. tins) not less than 5 cwt. lots	per ton delivered	95 10 0
Red Lead, Dry (packages extra)	per ton	48 10 0
Best Linseed Oil Putty	per cwt.	1 11 3
Filocol	per cwt.	0 16 6
Size. X D Quality	fkn.	0 6 0

VARNISHES, &c.

		Per gallon. £ s. d.
Oak Varnish	Outside	0 17 0
Fine ditto	ditto	0 19 0
Fine Copal	ditto	0 20 6
Pale Copal	ditto	0 21 6
Pale Copal Carriage	ditto	0 23 6
Best ditto	ditto	0 33 6
Floor Varnish	Inside	0 18 0
Fine Pale Paper	ditto	0 17 0
Fine Copal Cabinet	ditto	0 21 6
Fine Copal flatting	ditto	0 19 6
Hard drying Oak	ditto	0 17 0
Fine Hard drying Oak	ditto	0 18 0
Fine Copal Varnish	ditto	0 19 6
Pale ditto	ditto	0 21 6
Best ditto	ditto	0 33 6
Best Japan Gold Size		0 19 0
Best Black Japan		0 22 0
Oak and Mahogany Stain		0 21 0
Brunswick Black		0 14 0
Berlin Black		0 19 0
Knotting		0 31 0
French and Brush Polish		0 22 0
Liquid Dryers in Terebine		0 17 0

* The information given on this page has been specially compiled for THE BUILDER and is copyright. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach him *not later than* 12 *noon on Wednesday.*

* Denotes *accepted* † Denotes *provisionally accepted.*

‡ Denotes *recommended for acceptance.*

BANSTEAD.—For alterations, &c., at the Cuddington Hospital. For (*a*) The Epsom (Rural), Sutton, Carshalton, and Leatherhead Joint Hospital Board; (*b*) Mr. A. C. Williams, Ashley-road, Epsom :—

*C. J. Norrington, Epsom .. £485 10 0
C. H. Runnalls, Sutton 515 0 0

BRIDLINGTON.—Erection of operating box at Grand Pavilion, for the Corporation :—

*W. & F. Usher £171 11 0

CONSETT.—For the erection of 122 houses for the Urban District Council :—

The tender of Messrs. Lough Bros., 12, Grey-street, Newcastle-on-Tyne, for houses only, has been provisionally accepted: Type I. houses, £925 each; type II. houses, £975 each.

CREWE.—For painting at the Isolation Hospital, for the Corporation :—

*Mr. Fletcher £376 11 7

GLASGOW.—For painting work at the Slaughter House, for the Corporation :—

*M'Culloch & Co... .. .. £7,510 9 2

GLASGOW.—For slater work at the Dalmernock Generating Station, for the Corporation :—

*H. Arbuckle & Son £204 17 10

HALIFAX.—For work connected with extension of the Press House at the Salterhabble Sewage Works, for the Corporation :—

*Messrs. Bower Bros., Halifax, excavators', concretors' and bricklayers' work £3,511 5 11
*John Berry, Halifax, steel work £70 0 0
*Fielding & Bottomley, Halifax, carpenters' and joiners' work.. £46 12 6

HALIFAX.—For construction of sewers in Shay-lane and Holdsworth-road, for the Corporation :—

*E. W. Bedford, Halifax .. £3,964 4 4

LEEDS.—For painting of offices of Health Department, for the Corporation :—

*Carter & Frankland.. .. .. £289 14

LEEDS.—For the erection of factory and offices, for Major J. P. Bate, in conjunction with the steel building of the Trus-con Co., which is at the rear (Messrs. Albert E. Bullock & Jeeves, Architects and Surveyors, 141, New Bond-street, W. 1) :—

William Simpkiss, Hunslet, Leeds: Offices, £22,493; forecourt, £1,004 drainage block, £2,726.
Wm. Thompson & Sons, Leeds: Offices, £21,970; forecourt, £1,041; drainage block, £2,480.
*Wm. Airey & Son, Leeds: Offices, £20,857; forecourt, £996; drainage block, £2,363.
D. G. Somerville & Co., Ltd., London, S.W. 1: Offices, £19,830; forecourt, £927 15s. 8d.; drainage block, £2,173 16s. 7d.

LONDON.—For alterations and additions at the Maternity Home, for the Fulham Borough Council :—

Swan Bros. £897 12
George Roberts 454 2
*R. Dixon 435 10

PADDINGTON, W.—For the construction of a depot for the Anglo-American Oil Co., North Wharf-road :—

*F. D. Huntingdon, Ltd.

STAFFORD.—For the construction of forty-four houses on the Coton Field Estate, for the Corporation. Mr. W. Plant, Borough Engineer and Surveyor :—

*J. Cooke, Longport, Staffs. £32,847

PALMER'S GREEN.—For the erection of a music hall. Mr. J. Stanley Beard, M.S.A., architect :—

		Time.
Munday & Son	£48,783	Not stated.
McCormick & Son	46,372	15 months.
Wallis & Son	46,217	Not stated.
J. Howell Williams	46,128	Not stated.
Patman & Fotheringham	45,451	Not stated.
Misken & Son	45,095	Not stated.
Fairhead & Son	44,637	11 months.
Holliday & Greenwood	43,890	8 months.
Mattock Bros.	42,977	9-12 months.
Pitheer, Ltd.	42,197	10 months.
Bovis, Ltd.	41,597	6 months.
Rice & Son	40,829	8 months.

SALFORD.—For painting parts of the Ladywell Sanatorium, for the Corporation :—

*E. Tate & Co., Salford £380
*J. Broomhead & Sons 376

STOCKTON-ON-TEES.—For new retorts, &c., for the Gas Department of the Corporation :—

*Woodale-Duckham & Co. Westminster, S.W. £55,475

STAFFORD.—For the erection of (*a*) 20 houses in Coton Field, and (*b*) erection of 24 other houses, for the Corporation :—

*J. Cooke ..(*a*) £14,288 15s. (*b*) £18,559 3s.

THORNEY.—For the erection of two pairs of brick and slated cottages, on the Small Holding Farm, at Thorney, for the Isle of Ely County Council. Mr. R. S. W. Perkins, architect, Downham-road, Ely :—

*Exors. of R. Shanks, Chatteris £2,600

WHITSTABLE.—For the erection of 51 houses for the U.D.C. :—

‡ Messrs. Hughes £56,397

WIGSTON MAGNA (NEAR LEICESTER).—For the erection of 20 houses in Moat-street and Horsewell-lane, together with the making up of carriageway, and the construction of paved causeway, including kerbing, channelling, &c., for the Wigston Magna U.D.C. Mr. W. J. J. Clarke, Surveyor :—

*W. Moss & Sons, Ltd., Loughborough £18,627
Oldershaw Bros, Wigston 20,690
Jas. Ellingworth, Leicester.. .. 21,500

WOLVERHAMPTON.—For construction of sewer at Parkfield-road, for the Corporation :—

*A. Holloway, Wolverhampton .. £2,257 2 6

British Portland Cement Manufacturers, Ltd.

The directors' report for the year ended April 30, 1919, states that, although the demand for cement for the home trade fell off at the cessation of hostilities, the resumption of the export trade counterbalanced this to some extent. The production during the year showed a moderate increase, improved facilities for obtaining labour being granted when the Government was pressing for increased deliveries. The balance on the year's trading, including a sum £87,723 carried forward, and after paying directors' fees, debenture stock, interest, &c., and transferring £75,000 to the depreciation reserve account, was £272,919. The directors recommend the payment of a final dividend on the preference shares, and 8 per cent. on the ordinary shares (against 6 per cent. in the previous year), leaving £91,509 to be carried forward.

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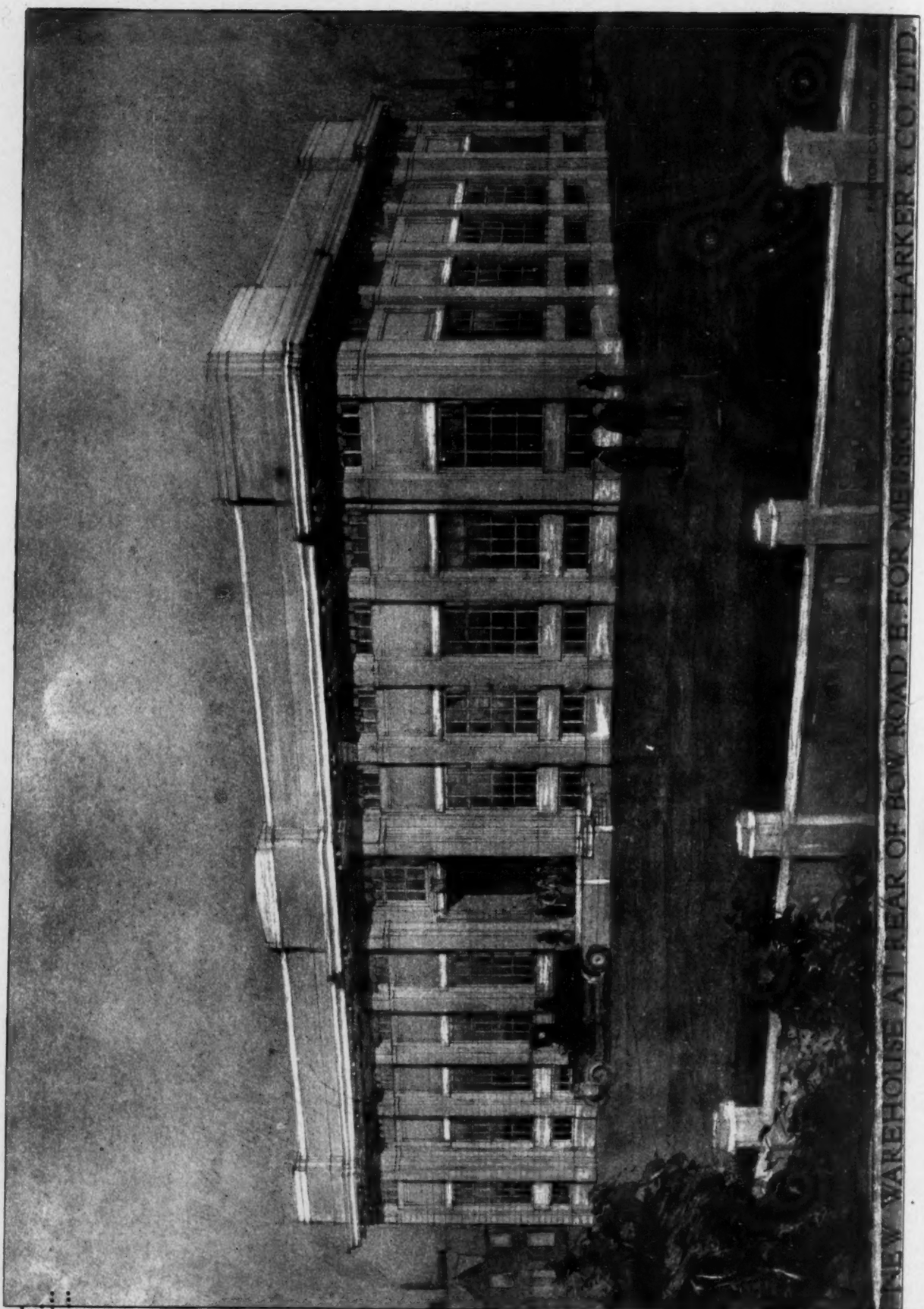

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H. H. ARCHER, ARIBA
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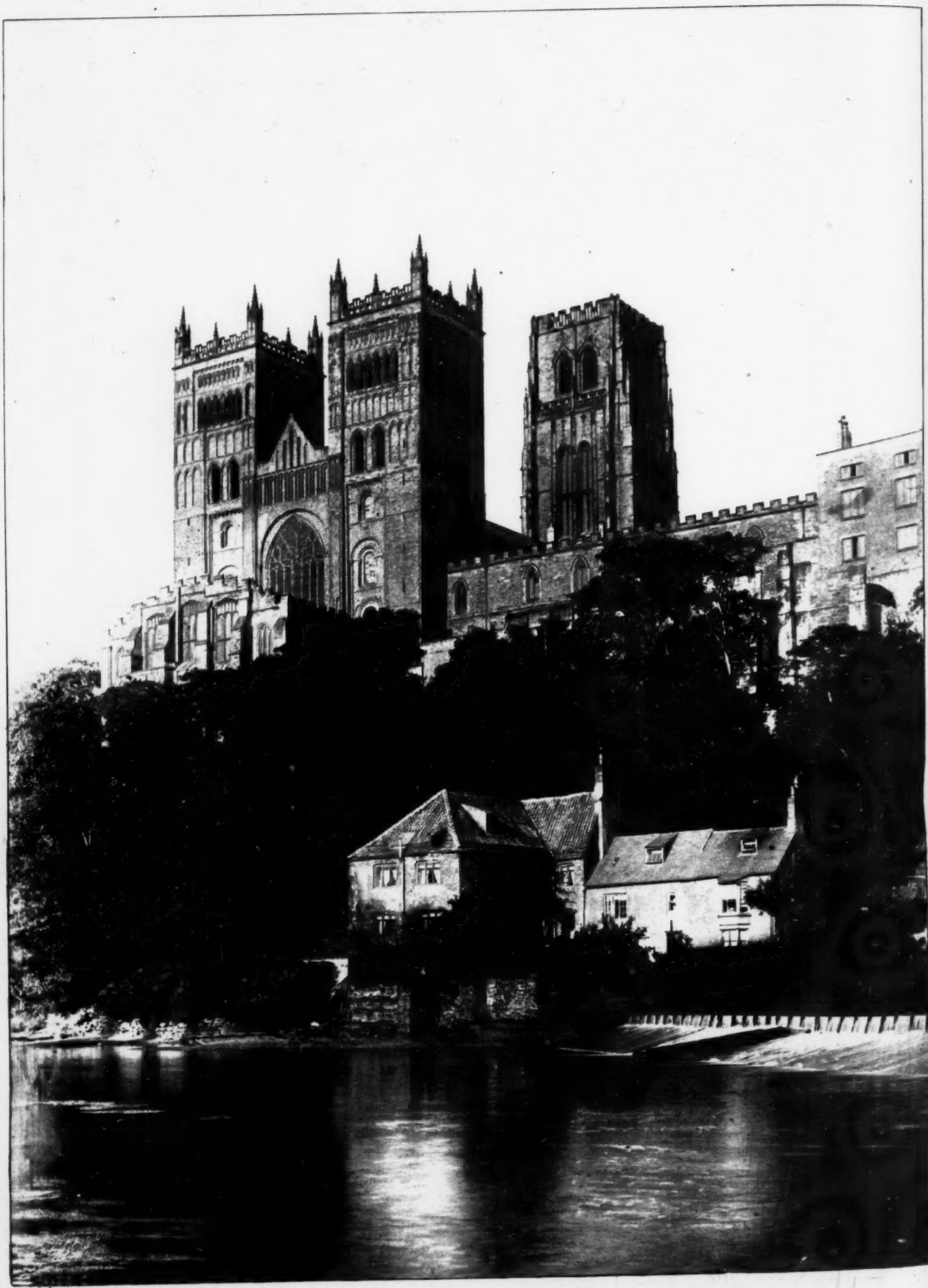
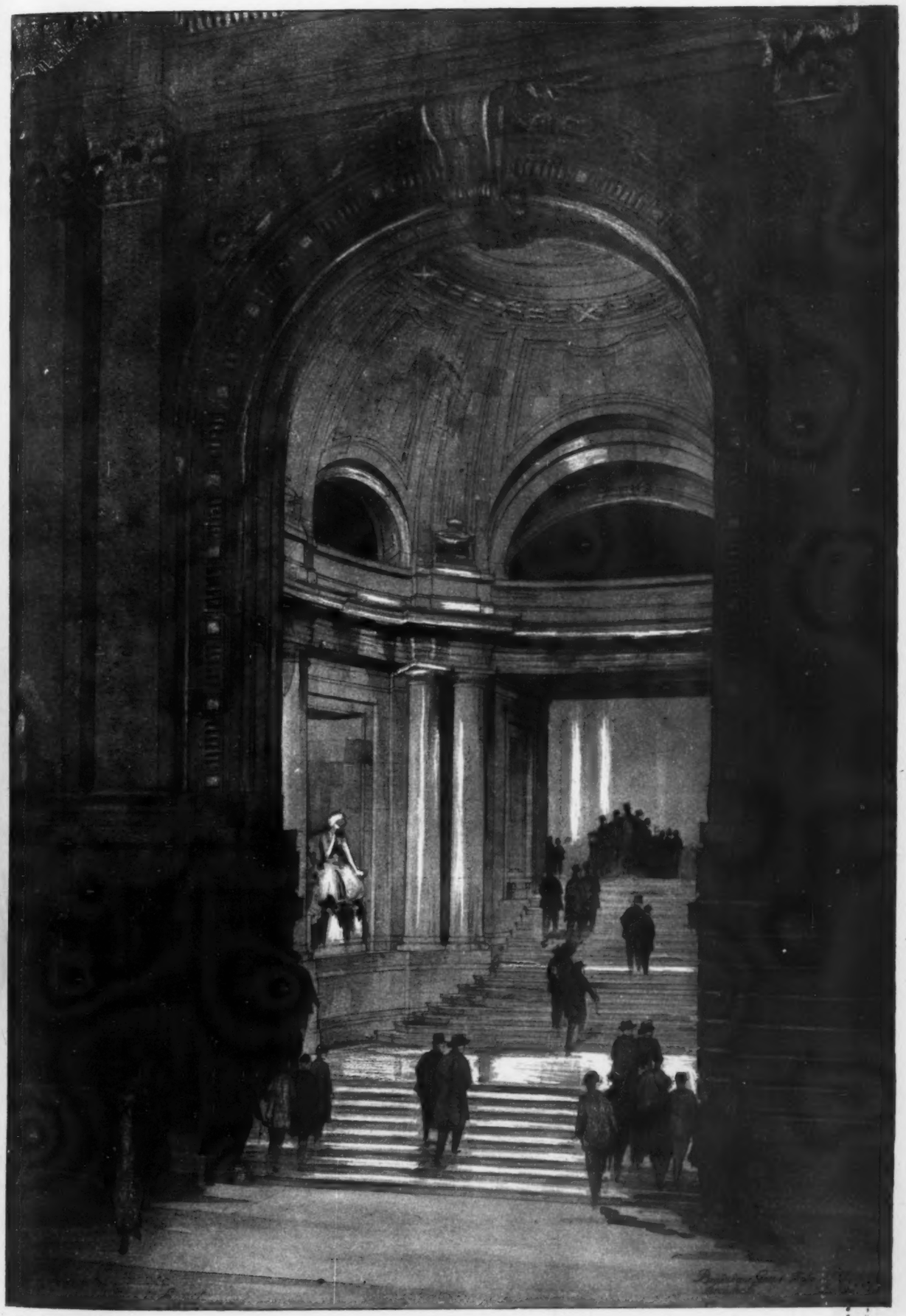


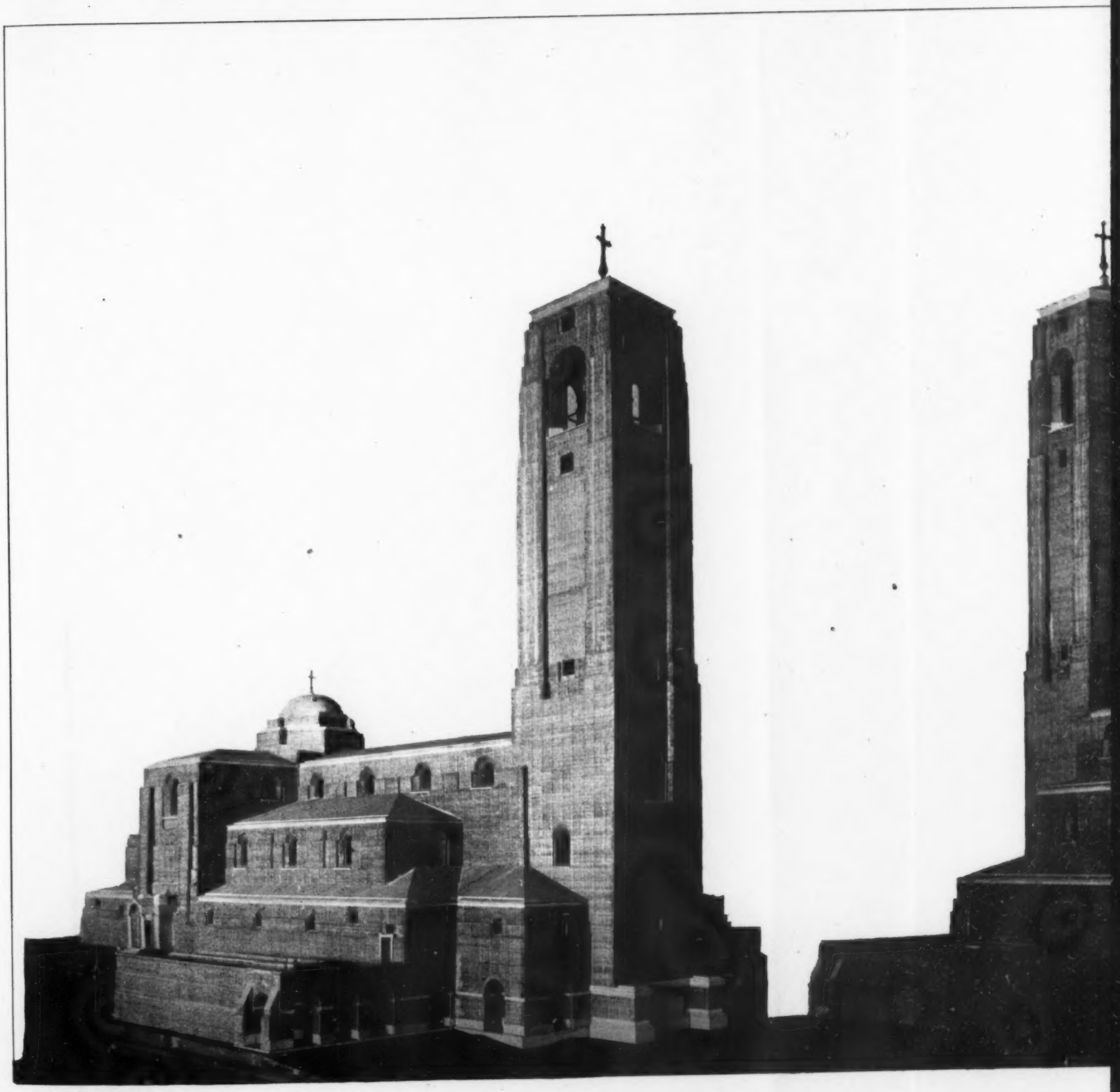
PHOTO. JOHN R. EDIS, DURHAM.

DURHAM CATHEDRAL. FROM SOUTH-WEST.



R.A. Exhibition.

THE MAIN ENTRANCE, MANCHESTER ROYAL EXCHANGE.—Messrs. Bradshaw, Gass & Hope, Architects.



R.A. EXHIBITION.

MODEL OF WAR MEMORIAL CHURCH.—SIR EDWIN L. LUTYENS, A.R

MODEL OF WAR MEMORIAL CHURCH.—SIR EDWIN L. LUTYENS, A.R.A., ARCHITECT.

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